

# American Aviation

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## Fortnightly Review

### Procurement Maze

THE most amazing confusion surrounds the government's aircraft procurement program. Months have passed without any notable improvement and, in fact, from many angles the confusion today is far worse than it was six months ago.

As the able Washington columnists, Alsop and Kintner, have pointed out, "unless the whole fantastic administrative cat's cradle is unexpectedly disentangled, the new program will have to succeed more by good luck than by good management."

There are so many government agencies, councils, divisions, bureaus and sections involved in aircraft procurement policy that the picture is completely muddled and not one person in Washington could possibly set forth clearly where one agency begins and another leaves off. Yet, the U. S. has embarked on a tremendous air program of immense importance to itself and the world.

Here, for example, are the agencies concerned with policy in aircraft procurement:

The President and his executive staff.

The Treasury Department.

The War Department and its General Staff (with more non-air than air representation), and the Air Corps.

The Navy Department with its Navy Staff and its Bureau of Aeronautics (way down the line).

The Office of Production Management (OPM) whose powers still remain undefined

## United Air Lines Offers Aid In Aero Engine Production

### BRAZIL CREATES A SINGLE AIR UNIT

All Military, Naval and Civil Aviation Given Ministry Ranking; To Have Separate Air Force

In a far-reaching and significant move, President Getulio Vargas of Brazil has created a Ministry of Aeronautics which consolidates all phases of aviation under one head, including the military and naval branches.

President Vargas has named Sr. J. P. Salgado Filho to the post of Aeronautics Minister and it is considered noteworthy that Sr. Filho is not regarded as a representative of either the military or civil aviation units. He previously held the posts of minister of labor, chief of police in the Federal District, and was once minister of the Supreme Military Tribunal.

The new ministry gives a prominence to aviation not enjoyed in peacetime by any other country in the Western Hemisphere. It includes the Army, Navy and Civil Aeronautics departments, and the aviation services of the Ministry of

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### Elected to Board



Lawrence D. Bell

President and general manager of Bell Aircraft Corp., Buffalo, who has been elected to the board of directors of Sterling Engine Co., also of Buffalo. (Story on page 30).

### May Test-Run 'Green' Assemblies; Plane Priorities Near O.K.

THE MODERN shops and engine experts of United Air Lines at Cheyenne, Wyo., have been made available to the government in an attempt to aid engine production for national defense. W. A. Patterson, United's president, wired Merrill C. Meigs of the Office of Production Management on Jan. 30, offering the facilities of the extensive shops for handling test runs on "green" assembled Pratt & Whitney engines.

The OPM was informed that United's engine staff and test stand installation, without expansion, could handle both "green" and final test runs on all Pratt & Whitney engines required by United and other domestic airlines using the Hartford-made power units, thus leaving Pratt & Whitney's extensive battery of test stands available entirely for military production.

The move may have an important bearing on speeding up priorities for commercial aircraft. Meanwhile, the commercial aircraft priorities committee in Washington was preparing to make recommendations to the Priorities Board with indications that approximately 55 commercial airliners will be released, complete with engines and all necessary equipment and accessories, between now and June. The engine shortage which existed some months ago has to a large measure been alleviated.

The idea of using United's shops on commercial engines comes as a result of the search by OPM's engineers for ways of accelerating the growing production of aircraft engines, it is understood. Pratt & Whitney is said to have no objection to the plan of permitting the airlines to help themselves if the arrangement suggested is approved by national defense priorities and production officials in Washington.

"Green" assembled engines are complete except for accessory installations but have not gone through the extensive test stand

## Airlines Expected to Speed Training as Big 5 Lose 64 Pilots to Military

The necessity for a general acceleration in the training of pilots by the airlines became evident last week as a survey showed that the five largest domestic air carriers already have lost a total of 64 captains and first officers to the Army and Navy.

It also was reported that a plan is being studied in Washington for the training of military pilots, mechanics and other personnel by the airlines.

Rear Adm. John H. Towers, chief of the Navy's Bureau of Aeronautics, already has warned that the airlines may be drained of their

the Navy is expected to carry out this program. The Army, however, with an eye on keeping the airlines operating on as normal a basis as possible, may be more willing to work out other arrangements with the carriers.

Prior to the start of the national defense program, the airlines were able to draw pilots from the Army and Navy, and with some additional training, put them into service. With this source no longer available, however, almost all of the larger lines have started training on a much wider scale.

According to statistics compiled


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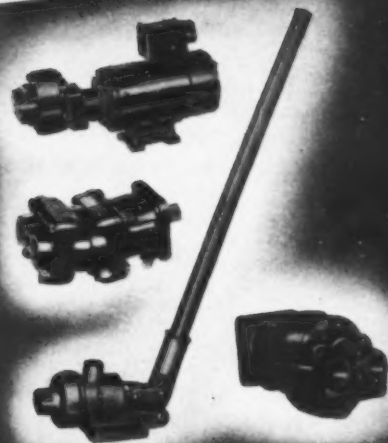
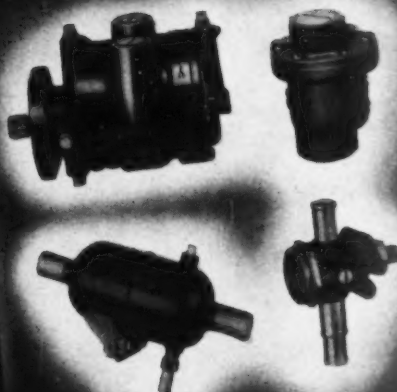
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## Speed

### Table Shows U. S. Ships Are Swift

Maximum speeds of at least two American pursuit planes exceed those of any warplane now in action in Europe, while other recent U. S. fighters equal and in some cases excel the speeds of British and Nazi ships.

Authority for these facts is the Aviation Writers Association, headed by Devon Francis, Associated Press aviation writer. The association has compiled the following table of comparative statistics. All speeds are approximate and are at critical altitude, ranging from 12,000 to 23,000 feet:

Model	Horsepower	Top Speed
<b>GERMANY</b>		
Messerschmidt 109 ...	1150	360 mph
Messerschmidt 110 ...	2300*	370
Heinkel 112 ...	1150	360
Focke-Wulf 198 ...	1500	370
Focke-Wulf 187 ...	2300*	360
<b>BRITAIN</b>		
Hurricane "1" ...	1030	335
Spitfire "1" ...	1030	365
Spitfire "2" ...	1250	385
<b>UNITED STATES</b>		
Curtiss P-40 ...	1090**	360
Bell P-39 ...	1150**	385
Lockheed P-38 ...	2175**	390
Vultee Vanguard ...	1050	360
Vought-Sikorsky XP4U-1 ...	1850	400 plus

\* Twin-engine.

\*\* Government rated horsepower.

## 1,000 Persons Attend Institute Gathering; Medals Presented

More than 1,000 persons attended the Honors Night dinner of the Institute of the Aeronautical Sciences at the Biltmore Hotel, New York City, on Jan. 28. Maj. James H. Doolittle, outgoing president of the Institute, presided, and introduced the new president, Frank W. Caldwell, Griffith Brewer, president of the Royal Aeronautical Society of Great Britain, gave the principal address.

Presentation of medals which had previously been announced was a feature of the evening.

Announcement was also made of the election of Dr. George W. Lewis, director of aeronautical research for the National Advisory Committee for Aeronautics, as honorary fellow for 1940. The following were elected to honorary membership: Harlee Branch, chairman of the Civil Aeronautics Board; Maj. Gen. George H. Brett, acting chief of the Air Corps; Griffith Brewer, and Gen. Delos C. Emmons, commanding general, GHQ Air Force.

The following were announced as having been elected fellows of the Institute in 1940: Allan Chilton, project engineer of Wright Aeronautical Corp.; Charles H. Colvin, acting chief, instrument division, U. S. Weather Bureau; Smith J. De France, NACA; Melvin N. Gough, senior airplane test pilot, NACA; S. D. Heron, research engineer, Ethyl Gasoline Corp.; Maj. Paul H. Kemmer, chief of aircraft branch, materiel division, Wright Field, Air Corps; Paul Kollsman, director and vice president, Square D Co. in charge of Kollsman Instrument Division; George A. Page Jr., chief engineer, St. Louis Airplane Division, Curtiss-Wright Corp.; F. W. Reichelderfer, chief, U. S. Weather Bureau; Igor Sikorsky, aeronautical engineer, Vought-Sikorsky Aircraft.

### SW Conference Apr. 24-26

The Southwest Aviation Conference will meet April 24-26 at Wichita, Kan., for its fourth annual convention. The theme will be divided into two main topics: First, air defense; Second, preparation for later.

## Daytime Cloud Ceiling Detector Announced

A new method of measuring the height of clouds over an airport during the daytime has been devised by the National Bureau of Standards, the Dept. of Commerce announced recently. The equipment used, developed at the request and with the financial aid of the U. S. Weather Bureau, has successfully detected daytime cloud ceilings as high as 9,000 ft.

When the daytime clouds are so bright that the beam of the "ceiling projector" used at night is invisible, preventing the utilization of the usual optical instruments, a modulating light is used. The beam is broken into short evenly-spaced pulses of light, the reflection of which can be detected with a photoelectric tube and amplifier.

In use, the photoelectric detector scans the base of the cloud until the meter on the amplifier indicates that the modulated signal light is being received. The angular setting of the detector then corresponds to the angular elevation of the spot on the cloud.

### AIDE TO JOUETT

#### Col. Brand Leaves Board of Trade, Becomes Assistant to President of Chamber

Col. Harrison Brand, Jr., executive secretary of the Washington, (D. C.) Board of Trade since 1938, has been appointed assistant to Col. John H. Jouett, president of the Aeronautical Chamber of Commerce.

Col. Brand is a graduate of West Point Military Academy, 1914, and he has been associated with the law firm of Claude I. Parker in Los Angeles, and the engineering firm of Sanderson & Porter in New York, specializing in industrial investigations. For two years prior to 1938, he served as public utilities commissioner of the District of Columbia.

### Buffalo Honors Woods

Robert J. Woods, chief design engineer of Bell Aircraft Corp., has been named by the Buffalo Junior Chamber of Commerce to receive its gold key for the year's outstanding civic achievement. The award committee reported that Wood was chosen on the basis of his "long list of aeronautical engineering accomplishments."

### Newton Leaves CAA

Gaylord W. Newton, chief of the CAA power plant section, has resigned to join Boeing Aircraft Co. He has been succeeded at CAA by Ralph White.

## Weather Bureau Has Project Underway to Provide Five-Day Forecasts

An experimental project to provide weather forecasts covering a period of five days, which may eventually prove of substantial benefit to the aviation industry, has been established by the U. S. Weather Bureau, the Dept. of Agriculture and Massachusetts Institute of Technology.

The project, located at Cambridge, Mass., issues advisory five-day precipitation and temperature forecasts every Monday and Thursday night. Forecasts cover the entire U. S. and are distributed by wire to all district forecast centers and many airway forecast centers of the Weather Bureau.

With the aid of this information, together with observational data from practically the entire Northern Hemisphere likewise distributed by wire from Cambridge, the thirteen Weather Bureau field offices prepare the final forecasts.

Dr. Carl Rossby of the Weather Bureau stated that the project has been underway for only a few months, but that research has been going on for the last four or five years. Although some degree of accuracy is being obtained, much work remains

## Shortage of Trained Meteorologists Seen

Due to the heavy demands of the national defense program, it is expected that there will be a shortage of trained meteorologists in the near future, according to Comdr. F. W. Reichelderfer, chief of the U. S. Weather Bureau.

At present, it is learned, approximately 260 meteorologists are being trained at five universities: Massachusetts Institute of Technology, Chicago, UCLA, California Institute of Technology and New York University. Of these, 74 are being trained under the Civilian Pilot Training Program, 10 by the Weather Bureau, 155 are flying cadets and 20 are regular Army or Navy officers.

With the exception of the Weather Bureau's 10, all of these are expected to be taken over by the Army or Navy. Comdr. Reichelderfer states that the Bureau will need 75 to 100 meteorologists this year, to fill new jobs and to replace men entering military service.

### Abercrombie & Fitch Co.

#### Will Stage Aero Exhibit

An aviation show which will embrace late developments in equipment, exhibits by leading manufacturers of planes and instruments, and a large display of scale and flying models of all types will be staged by Abercrombie & Fitch Co., well-known sporting goods store at Madison Ave. & 45th St., New York City, from Feb. 15 to Mar. 1.

Among exhibitors will be Kollsman Instrument Division, Curtiss-Wright Corp., Eastern Air Lines, Casey Jones School of Aeronautics and LaGuardia Field. Some of the leading aviation artists such as Eric Sloane, Henri Farre, Wayne Davis, will exhibit oils, water colors and etchings.

The public will be admitted without charge. No charge is made for any exhibitor for space, "and as far as the manufacturers' exhibits are concerned, the purpose is purely educational," according to W. J. Donovan, vice-president of Abercrombie & Fitch.

"It is interesting to note that this company has been actively connected with aviation since 1912," Donovan points out. "In that year, our catalog describes the sport of ballooning and offers for sale balloons and equipment of all types."

### Hildebrandt Elected

Thomas T. Hildebrandt, representative in Washington for several aeronautical concerns, has been elected president of the Washington Representatives Association.

## Feeder Official



Keith Kahle

Western representative for Southwest Feeder Airlines Inc., Oklahoma City, Okla., who originated a series of feeder airline routes in the southwest now pending before the Civil Aeronautics Board. Kahle was publisher of "Taxi-Strip," regional aviation magazine.

## Large Art Collection Presented to Archives By Mrs. B. C. Landauer

Maj. Lester D. Gardner, president of the Aeronautical Archives, announced Jan. 28 that Mrs. Bella C. Landauer of New York has presented to the Archives one of the most comprehensive collections of aeronautical art in the world. Several thousand English, French, Italian and German prints are included in the collection.

In addition to the prints, Mrs. Landauer's gift includes over 1,000 aeronautical songs, marches and other musical compositions. Some of these were written about 1785 shortly after the earliest balloon ascents. No other similar collection is known, Maj. Gardner said. Many aeronautical book plates and hundreds of trade cards which have aeronautical illustrations are included.

"The generous contribution of this collection will make the Institute of the Aeronautical Sciences, with its Burden Library and Paul Kollsman Lending Library, second only to the Library of Congress as a place for reference on any phase of the art and science of aeronautics," Maj. Gardner said. Mrs. Landauer was made a benefactor member of the Institute.

## Calendar

- Feb. 15-23—6th Annual National Sportsmen's Show, Grand Central Palace, New York, N. Y.
- Feb. 15-Mar. 1—Aviation Show, Abercrombie & Fitch Co., Madison Ave. at 45th St., New York, N. Y.
- Feb. 22-Mar. 2—3d Annual International Sportsmen's Show, International Amphitheater, Chicago, Ill.
- Mar. 3-7—American Society for Testing Materials, Maydower Hotel, Washington, D. C.
- Mar. 12-13—SAE National Aeronautic Meeting, Washington Hotel, Washington, D. C.
- Mar. 17—Founders Day Meeting, Akron Women's Chapter, NAA, Akron, O.
- Mar. 24-25—Machine & Tool Progress Exhibition, Convention Hall, Detroit, Mich.
- Apr. 24-26—Southwest Aviation Conference, 4th Annual Convention, Wichita, Kan.
- Aug. 25-Sept. 2—3d Annual American Open Soaring Contest, Joliet, Ill.
- Oct. 30-Nov. 1—SAE National Aircraft Production Meeting, Biltmore Hotel, Los Angeles, Cal.

## NACA Breaks Ground at Cleveland



Picture shows preliminary layout of NACA's proposed third major research station, bordering Cleveland Municipal Airport. Ground was broken for the engine research laboratory on Jan. 23. Congress has approved \$8,400,000 worth of construction of research facilities for the NACA at this station, which will be devoted to scientific research on fundamental problems looking to the improvement of American aircraft engines.

## Gorrell Sharply Criticizes McCarran Airport Bill, Calls it Unnecessary

Asserting that no new legislation is needed to give the nation a permanent federal aid program for airports and that legislative proposals at this time only serve to "befog the issue," Col. Edgar S. Gorrell, president of the Air Transport Association, indirectly assailed the McCarran airport bill in an address before the airport conference of the American Road Builders' Association in New York City Jan. 30.

Criticizing the formula for distribution of airport funds as "featured in the McCarran bill," Col. Gorrell said "there is surely no need at this time to complicate the problem by providing for an elaborate system of grants-in-aid to the states, with costly state agencies and a paralleling federal bureaucracy."

Col. Gorrell said that when Congress appropriated \$40,000,000 last year for airport construction to implement Section 302 (a) of the Civil Aeronautics Act, it confirmed the belief of many that there is no need of further legislation. "No new and elaborate airport legislation is necessary," he said. "The thing that is needed is a sentence in an appropriation act."

### Much More Needed

"There is immediate need for more than \$500,000,000 if the program which the House Committee characterized as vitally important is to be carried forward," he said. "But it will be many long years before that program is realized if our national efforts continue to suffer from divided counsels, if those in charge are drawn off the track by disputes about methods and machinery, if energy is wasted upon so-called airport bills which are unnecessary."

"The Committee on Appropriations of the House of Representatives has already approved a policy of federal airport development and Congress has ratified that policy. That policy can and should be implemented by regular annual appropriations. Let us stick to that simple point—and have done with it."

### Tulsa's Profit

Tulsa Municipal Airport, Tulsa, Okla., maintained its long-established record of making an annual profit during 1940 while most airports turned up deficits. Charles W. Short Jr., manager, reports that the operating profit for 1940 was \$10,824.64 and will be used, as usual, for improvements to the field. During 1940 more than 220,000 persons landed or took off in 85,000 planes.

## AIRPORT MEETING IS WELL ATTENDED

Speakers Urge More Federal Funds; Conference Sponsored by Five Groups

The best attended airport meetings ever held featured the 38th annual session of the American Road Builders' Association at the Hotel Pennsylvania, New York City, Jan. 27-31, with the technical airport conference occupying two days.

The meetings were sponsored by the Airport Division of ARBA, the University of Michigan, the National Aeronautic Association, the National Association of State Aviation Officials, and the American Association of Airport Executives.

Col. Floyd E. Evans, director of the state board of aeronautics for Michigan, was re-elected president of the ARBA's airport division at the close of the meetings.

Among the speakers were Gill Robb Wilson, president of NAA; Col. Robert Olds, Air Corps; Col. Donald H. Connolly, Civil Aeronautics administrator; Capt. L. L. Odell, consulting airport engineer; Prof. William S. Housel, associate professor of civil engineering, University of Michigan; William M. Aldous, chief of the CAA soils and paving unit; Capt. Clarence Cornish, manager of Fort Wayne, Ind., Airport; Maj. A. B. McMullen, chief of the CAA airport section; William Jackson, chief of the CAA radio development section; William B. Stout, president of Skycraft Corp., Dearborn, Mich.; Col. Edgar S. Gorrell, president of the Air Transport Association, and Howard Knotts, editor-in-chief of the *Journal of Air Law and Commerce*.

Reports of the progress of the CAA airport program were given by various speakers, while almost all of the addresses proposed much greater expenditure of federal funds for airport construction. William C. Slee, assistant engineer-director of the ARBA, was in general charge of the program, assisted by A. H. Near, superintendent of Bowman Field, Louisville, Ky., and president of the American Association of Airport Executives. Average attendance per session was over 200.

## Airport Design Awards Made

Winners of the AMERICAN AVIATION Awards in the competition for excellence in airport terminal designs were announced in New York City, Jan. 30, at the technical airport conference held during the 38th annual sessions of the American Road Builders' Association. The competition, for which AMERICAN AVIATION made possible the awards, was open to college and university architecture and engineering students and is expected to be an annual affair.

The winners:

**FIRST AWARD:** W. D. Kinsell, 1415 Cambridge Road, Ann Arbor, Mich., University of Michigan. \$100 cash prize and plaque.

**SECOND AWARD:** C. W. Lane, 512 Mack Road, Ann Arbor, Mich., University of Michigan. \$50 and plaque.

**THIRD AWARD:** J. W. Butler, 535 Walnut St., Ann Arbor, Mich., University of Michigan. \$25 and plaque.

The judges were: Maj. A. B. McMullen, chief of the airport section, Civil Aeronautics Administration, Washington, D. C.; William C. Slee, assistant engineer-director, American Road Builders' Association, Washington, D. C.; Col. Floyd Evans, president, airport division, ARBA, and director of the state board of aeronautics, Michigan; Lt. Al Near, president, American Association of Airport Executives, and superintendent of Bowman Field, Louisville, Ky.

Announcement of the winners was made by Harvey L. Williams, chairman of the New England Aviation Conference, who was chairman of the luncheon. Presentation was made by Wayne W. Parrish, editor of AMERICAN AVIATION and president of American Aviation Associates Inc. In the absence of the student winners, the awards were received by Prof. William S. Housel, associate professor of civil engineering, University of Michigan, and research consultant of the Michigan State Highway Department.

The first two winning designs, and photographs of the winners, will be published in AMERICAN AVIATION for Mar. 1.

## Off the Beam

FROM Richard Thruelsen's piece on "Canada's Open Secret" in the *Saturday Evening Post*, it is learned that the life span of a rear gunner in a modern bomber during combat is 47 minutes. . . . Harold Dahl, "who gave Franco so much trouble and American newspapers so many headlines," is now a sergeant pilot, in training as an instructor with the RCAF. . . . Canadian officials won't divulge the number of airmen being sent to England. And they won't discuss the much-publicized ferrying of American bombers across the Atlantic to Britain, as this is a civilian project controlled and administered by Canadian Pacific Steamship Lines.

NEARLY 40 types of airplanes are in service with the British fighting forces, according to a listing by the British magazine "Flight."

TWA'S FELINE mascot, Strato-Lizzie, was the principal topic of conversation at the opening of the Atlantic Cat Club's show in New York recently. Strato-Lizzie was absent. Strato-Lizzie (a male) is temperamental. He disappeared from LaGuardia Field the day before the show and didn't reappear for five days. TWA finally issued the following notice to employees: "If a special traveling box with a cat (white face and breast and dark grey back) inside arrives at your station, it's Strato-Lizzie, the famous alley cat." The cat was grounded for several days recently at one station because employees were not familiar with his schedule.

NEW TYPE four-ply synthetic rubber tires made by Goodrich have been placed on a station wagon and a truck owned by American Airlines at LaGuardia Field. The new tires, called Ameripol, will receive mileage tests on the station wagon which operates mainly on highways. The truck, used at the airport, will give the new rubber a grueling test under many quick starts and stops.

CARRIER PIGEONS of the RAF from May to November, 1940, were sent with 320 messages, 307 of which were delivered. One of the messages took news from Holland to the East Midlands in 4 hrs. 10 min. An exceptional performance was that of two pigeons which were released 340 miles from home in an entirely strange direction. They flew across two countries and a sea, but both homed, the first in 11 flying hours.

WILLIAM STOUT, president of Skycraft Corp., Dearborn, Mich., defines a commercial plane thusly: "A plane that will support itself in the air financially as well as mechanically." Stout says that every time the automobile industry has taken part in aviation it tries to adjust aviation to the automobile business and leave aviation problems hanging in mid-air. The Liberty engine, he believes, "is the best automobile engine ever built." As for the automakers, he says they think all they have to do is add horsepower and any vehicle will fly. "But no matter what horsepower you put in a canal boat, it's still just a canal boat." The average automobile engine, he points out, weighs 10 pounds per horsepower.

OF MORE than 70 pilots at the Bombing and Gunnery School at Jarvis, Can., 55 are from the U. S. So many are from California that they have dubbed the RCAF the "Royal California Air Force."

ACCURACY in aviation stories has taken a heavy beating recently in the public prints, mostly pertaining to picture captions. PM, the NY daily, had a photo of DC-2's on its front cover and described them as 21-passenger DC-3's bound for Great Britain. . . . The NY

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## Army Corps of Engineers Taking Over Airport Program; No Work Started

Only Few Bids Opened to Date as Engineers Find CAA Estimates As Much As 200% Off; Corps Now in Dominant Role

The U. S. Army Corps of Engineers has taken the spotlight in the national airport program now slowly getting underway and is preparing all plans, specifications and engineering estimates for all of the 200-odd projects in the first \$40,000,000 phase, leaving the Civil Aeronautics Administration in the nominal position of certifying the projects and handling details of some of the lesser ones.

Despite assurances by Administrator Donald H. Connolly that work would be underway on the projects by Feb. 15, it is likely to be months before work commences on many of them. First bids were opened the last week of January and the Army engineers estimates on most projects varied anywhere from 25% to 200% from CAA estimates.

It seemed clear from Washington developments that the Army Corps of Engineers would play the dominant role in all airport construction from now until the end of the national defense preparations, at least. The Corps is taking over all work on Army bases throughout the country and is having considerable to say about the Caribbean and Central American airport program being undertaken nominally by Pan American Airways with federal funds.

### Bill Sidetracked

Meanwhile it looked as though the McCarran airport bill creating a permanent federal aid program for airports was completely sidetracked for consideration this year. An indication of the trend of thought appeared when Col. Edgar S. Gorrell, president of the Air Transport Association, assailed the bill indirectly in an address covered elsewhere in this issue.

The Works Progress Administration is playing an important part in the program although it was not particularly welcomed at the start. Through WPA and other pressure, this agency is now handling, or will handle, about 75% of the total program, although the Corps of Engineers will be in the supervisory saddle.

Two officials of CAA are in the Corps of Engineers—Administrator Donald H. Connolly and Maj. Lucius Clay. The Army Air Corps, through Col. Robert Olds, and the Navy Department, were instrumental in selecting the 200 sites most important for national defense purposes.

Eighty-five officers and engineers of the engineering corps are now attending a course sponsored by the University of Iowa at the Rock Island base, the course designed to teach the engineers about airports and airport construction. Among the CAA personnel who are delivering lectures are Arthur Hook, chief of the survey and project section of the CAA airways and engineering division, and William Aldous, chief of the soils and paving section of the CAA technical development division.

### Corps Now At Work

The Corps of Engineers, it is understood, did not especially relish the idea of handling the airport program since it was, admittedly, not well informed or equipped to do this specialized job. But the Corps is now actively at work increasing its knowledge and in a matter of months is expected to have things well in hand. It was found that the only unit of the CAA properly equipped to handle construction was the airways engineering division of CAA of which Thomas Bourne is chief, and this division is handling a small part of the program.

The fact that estimates were so at variance has been one factor in delaying the start of construction.

Originally it was estimated that a total of \$200,000,000 was necessary to complete the 200 key defense airports, but it is certain now that the

entire program will have to be revised in accordance with new estimates.

Of the \$200,000,000 needed, Congress appropriated \$40,000,000 last year, not a cent of which has actually been spent on construction. Another \$80,000,000 is now pending Congressional action. Other funds will be supplied by WPA, and the CAA has \$33,500,000 in its budget for 1942 (starting July 1, 1941).

### Jones Interested

Secretary of Commerce Jesse Jones is understood to be evincing much personal interest in airports and is intending to ask Congress for \$280,000,000 to push the airport program nearer the goal of \$560,000,000 which the Civil Aeronautics Authority estimated would be necessary. Instead of a five-year program, as the CAA proposed, it is more likely that a goal of three years will shortly be in order. The larger program which Secretary Jones wants to launch goes far beyond the 200 airport projects now under consideration.

Another handicap in getting the 200 projects launched is the Congressional limitation of 5% of the funds for administrative and engineering work. Many in Washington believe that the only way the program can be expedited is to award the work to private engineers and contractors, thus avoiding the engineering limitation and hastening by many months the completion of the initial program.

As it stands now, the Corps of Engineers is handicapped by having to deal through WPA. It is felt that WPA is at best inferior to that of Army work or that of private contractors, but WPA has lost most of its best workers to private industry and defense projects. There is a decided lack of equipment and adequate trained personnel.

## Airport Projects

The Administration of Civil Aeronautics during the period from Dec. 10, 1940, through Jan. 21, 1941, issued 26 certificates of Air Navigation Facility Necessity, in effect approving 22 WPA, one NYA, one CCC and two joint CAA-WPA projects. Certificates involving over \$50,000 are:

**Municipal Airport, Dallas, Tex.**—\$239,216 for extending runways, installing drainage system, removing old runways, leveling and sodding field, etc. (WPA)

**Greenville Airport, Greenville, Miss.**—\$119,436 for constructing airfield, including clearing, grading, paving runway, fencing, lighting and erecting administration building and hangar. (WPA)

**Municipal Airport, Goldsboro, N. C.**—\$168,811 for non-federal project to construct an airport near Goldsboro. Work includes clearing site, stabilizing and surfacing runways, electrical construction, drainage, etc. (WPA)

**Naval Reserve Air Training Base, New Orleans, La.**—\$306,206 for non-federal certified special national defense project providing for initial development of proposed naval air base. Project includes preparing site, grading, drainage, surfacing runways, paving turnarounds, etc. (WPA)

**Municipal Airport, Santa Monica, Cal.**—\$223,100 for improving airport by constructing runway, clearing, grading, surfacing, etc. (WPA)

**Salt Lake Municipal Airport, Salt Lake City, Utah.**—\$52,926 to construct minor buildings, sidewalks, fences, water supply system, etc. (WPA)

**Municipal Airport, Starkville, Miss.**—\$53,039 for building minor structures, sidewalks, fences, water system, etc. (WPA)

**Municipal Airport, Idaho Falls, Idaho.**—\$99,161. This project temporarily withheld. (WPA)

**Barre-Montpelier Municipal Airport, Berlin, Vt.**—\$356,636 for runway extension and widening, draining, clearing, etc. (WPA)

**New Municipal Airport, Mobile, Ala.**—\$330,798 for construction of airport, including hangar, administration building, aprons, taxi-strips, draining, grading, etc. (WPA)

**Laconia Municipal Airport, Gilford,**

## Westchester Rejects CAA Airport Grant; Terms \$550,000 'Inadequate'

In a surprise and unprecedented move, the Westchester, N. Y., County Board of Supervisors on Jan. 27 unanimously rejected a grant of \$550,000 by the Civil Aeronautics Administration for the construction of an airport, on the grounds that the sum was inadequate.

The \$550,000 grant was part of the \$40,000,000 appropriation recently approved by Congress for the construction of 200 airports necessary for national defense. The project, scheduled for White Plains, was the largest of eight allotted to New York State.

The Board emphasized that it wished to aid in national defense, but said that "it has not been made clear that the proposed airport is an essential part of a plan of national defense." Under "proper terms and conditions," the supervisors said they favored construction of an airport, and added that under the present proposal the disadvantages outweighed the advantages. "The present allocation of \$550,000

is inadequate to complete hardly more than an emergency landing field," they said. "The lowest construction cost of any of the sites under consideration is approximately \$1,500,000, exclusive of the cost of hangars, land and highway and access costs. The representatives of the CAA indicated that additional appropriations were expected from Congress from time to time, but up to the present no assurance has been offered that the full cost of construction would be forthcoming."

Estimated county share of the cost, exclusive of hangars, but including acquisition of land and access and highway costs, varies from \$200,000 to \$500,000, and annual maintenance charge including depreciation would be from \$12,000 to \$15,000, the Board said. Construction of hangars would cost an additional \$300,000. "There is no assurance that the revenues would be adequate to cover the operating and fixed charges," they added.

**N. H.**—\$447,698 for construction of two hard surface runways, landing strips, clearing, grading, drainage, etc. (WPA)

**New Orleans Airport, New Orleans, La.**—\$260,269 for non-federal certified special national defense project providing for construction of buildings, grounds and facilities to train observation squadron of the National Guard. (WPA)

**Municipal Airport, Niagara Falls, N. Y.**—\$408,749 to improve airport by installing lighting system, grading, drainage, etc. (WPA-CAA)

**Municipal Airport, Augusta, Ga.**—\$112,325 to construct municipal airport, including excavation, paving runways and taxiways, installing lighting, relocating and paving roadway, enlarging existing hangar, erecting administration building, etc. (WPA-CAA)

**Municipal Airport, Fargo, N. D.**—\$83,253 for extending and improving facilities, including installing water mains, lighting and drainage. (WPA)

**Brownsville-Pan American Municipal**

**Airport, Brownsville, Tex.**—\$480,372 for enlarging present airport, installing two paved runways, drainage system, parking area, lighting, etc. (WPA)

**Municipal Airport, Wichita, Kan.**—\$328,782 for improvements to include grading, paving runways and connections, installing boundary and runway lights, drainage, etc. (WPA)

**Municipal Airport, Medford, Ore.**—\$451 for runway improvements, including grading and constructing turnaround and concrete loading apron, installing contact lights, etc. (WPA)

Projects under \$50,000 are: Kern County Airport, Bakersfield, Cal., \$2,894; Municipal Airport, Syracuse, N. Y., \$22,967; Williamsport Municipal Airport, Montoursville, Pa., \$39,589; Municipal Airport, Nashville, Tenn., \$35,693; Municipal Airport, Butte, Mont., \$47,033; Municipal Airport, Ft. Smith, Ark., \$46,526; Municipal Airport, Lake Wales, Fla., \$43,446; and College Airport, Williamsburg, Va., \$500.



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# \$13,601,910 NACA Fund Is Approved

## House Moves Toward Speedier Consideration Of Appropriation Measures After Lend-Lease Vote

By C. W. PAGE

CONCLUDING stormy debate on the lend-lease bill and sending a modified version over to the Senate side of the Capitol, the House gained momentum in preparation for speedier action on annual appropriation measures, leading off with approval of \$13,601,910 for the National Advisory Committee for Aeronautics.

Heeding the recommendation of the House Appropriations Committee that "the scientific research of the NACA is the most fundamental activity of the government in connection with development of America's potential strength in the air," the House quickly approved \$5,600,000 for continuing construction and equipment of the new aircraft engine research laboratory at Cleveland, \$3,409,020 for the Ames laboratory and a \$4,567,890 fund for administrative expenses, included in the Independent Offices bill now before the Senate.

In the same bill, \$200,000,000 is provided for use by the President for national defense emergencies such as the speeding up of aircraft production.

### Hearings Concluded

Meanwhile, the appropriations committee concluded hearings on the Treasury-Post Office appropriation bill following an exhaustive investigation of the advisability of increasing appropriations for the Post Office Department sufficiently to allow for the inauguration of a trans-Atlantic air mail service by American Export Airlines, denied last year on the grounds that the added federal expense was not justified since Pan American was carrying all the mail. Domestic air-mail payments are also covered in this bill.

Several weeks of inquiry are simultaneously proceeding before the Navy appropriations subcommittee which is calling witnesses from the aircraft and aircraft engine manufacturing industry to report on the status of the Naval aviation procurement program. Committee members are exhibiting a friendly and cooperative spirit in their dealings with the industry, according to reports, and are careful to assure aviation representatives that their chief purpose is to determine "what we can do to help you expedite the Naval air defense program."

### Vinson Will Continue

A similar, though more extensive, hearing was recently held by the House Naval Affairs Committee which handles authorizing legislation on Naval matters. Although all eastern aircraft witnesses requested to appear have already answered the committee's questions as to production delays, labor relations, financing and similar problems, Committee Chairman Vinson (D., Ga.) plans to continue the hearings later to hear west coast representatives. Progress on the

Navy's airbase and pilot training programs will also be discussed before the subject is closed, Rep. Vinson announced.

This committee, however, is postponing further consideration of Navy aviation to take up immediately Vinson's bill to establish a mediation board, modeled somewhat after the Railroad Mediation Board, for compulsory arbitration of labor disputes in aircraft plants and other factories working on Navy orders.

### Methods Studied

At the same time, the House Military Affairs Committee is occupying itself with a study of War Department methods of awarding cost-plus-fixed-fee and negotiated contracts, and of proposals for amending the Selective Service Act. During hearings on the former, Undersecretary of War Patterson, replying to a direct question, testified that the Army is not prepared at this time to recommend any legislation for regulating labor relations in defense industries.

Although little legislation has so far passed through both houses and reached the President, one bill was rushed to final enactment (H. J. Res. 80) to extend the time for certification of defense facilities and contracts for amortization purposes, under the excess-profits tax law, thus relieving the pressure on the War and Navy Departments while simultaneously giving manufacturers of aircraft, arms and other war supplies more assurance that the required routine could be carried out in time for them to take advantage of the amortization privileges of the act.

The Treasury meanwhile completed drafting of Treasury regulations under the excess-profits tax law to be followed in making Mar. 15 income tax returns.

### Air Derby Elects Officers

S. J. Butler has been elected president of the Washington (D.C.) Air Derby Association, succeeding Noble C. Shilt who was awarded the association trophy for service to local aviation in 1940. Other officers elected include Helen Trigo, first vice-president; Gertrude Chestnut, second vice-president; Mrs. Dorothy Waggy, secretary; George Kalec, assistant secretary; Harry Manuel, treasurer, and Eunice Brown, assistant treasurer.

### Air France Sells Field

Since suspension of Air France operations in South America at the outbreak of war, the Air France subsidiary in Brazil, Companhia Aero-postal Brasileira, has sold a number of its airports to the Brazilian government. These include the fields at Natal and Recife. The company maintains control of a number of other fields, however, including Florianopolis, and charges landing fees for all commercial planes using them. The Brazilian subsidiary was necessary because foreign companies cannot own landing fields in Brazil. Air France equipment is stored in Buenos Aires pending outcome of the war.

## CAA's New 20-KW Radio Stations to Be Completed in 5 Months



Diversity receiver bay at Barnegat showing eight receivers and control line terminal equipment. The latter is used in relaying the signals to the control station located at LaGuardia Field.



One of the 17 antennae at Sayville. These two towers are utilized in maintaining contact with planes for a distance of several hundred miles.

## Commercial and Military Possibilities of Klystron Radio Beam Portrayed

The story of the development of the klystron radio beam by Sigurd and Russell Varian is presented in an article by Frank J. Taylor in a recent issue of the *Saturday Evening Post*.

Developed by the Varian brothers in the laboratories of Stanford University in cooperation with Sperry Gyroscope Co. Inc., the beam, which cuts through static and every other type of interference and can sight enemy aircraft and register the range faster than the most expert gunnery range finder, is described by Taylor as one of America's secret weapons and a development with outstanding commercial possibilities.

Shot downward from an airplane, the klystron beam tells the pilot how far above the ground he is flying; directed ahead, it warns of mountain hazards in time to permit a change in course. At many airports, Army and CAA planes have made more than 1,000 perfect blind landings in every kind of bad weather with the use of the beam, the article states.

"The klystron hurls a strong, stable beam in wave lengths about four inches long, as compared with the 40-inch beam used by airlines," Taylor declares. "It radiates on a narrow angle of six-tenths of one degree, enabling pilots literally to 'ride the beam' like a trolley instead of gravitating between the edges of two nearly parallel beams as they do with existing

The 20-kilowatt radio stations being erected by the Civil Aeronautics Administration at San Francisco and New Orleans to furnish high-speed communication with foreign stations, will both be completed by July, according to CAA officials.

The San Francisco station is scheduled for completion first, and may be finished during April, with New Orleans scheduled for July. A similar station at Sayville, L. I. (*AMERICAN AVIATION*, Feb. 1) is already in operation.

When completed, each station will have six transmitters of 5.5 to 24 megacycles with output of 20 kw., and two transmitters of 2.5 to 16 megacycles with output of five kw.

Antennas will be sufficient to operate simultaneously on practically all assigned frequencies. This will be accomplished by means of discrimination networks that will permit the simultaneous operation of one antenna on at least two frequencies.

### Equipment

Stations will be equipped with four space diversity receivers with a range of three to 24 megacycles, and six similar receivers with a range of 1,000 kilocycles to 40 megacycles. Both high gain and a special antenna having a high signal-to-noise ratio will be provided to give diversity reception on any pre-designated frequency between four and 24 megacycles. Some of these antennae will be of the aperiodic type while the high gain antennae will be essentially non-aperiodic.

Both receiver and transmitter stations will be operated on an attended basis. The attending personnel will maintain the equipment and set up the circuit as directed by control station personnel.

The control stations will effect operation of both the receiver and transmitter stations by means of tone channeling equipment operating over land lines.

The San Francisco transmitter is being located on a 200-acre site 25 miles south of the city, while the receiver is on a 350-acre tract five miles west of the transmitter. In the east, the transmitter is at Sayville, L. I., and the receiver at Barnegat, N. J. In the south, both are at Slidell, La.

equipment on the country's airplanes."

Inspiration for the invention, Taylor states, came five years ago when Sigurd Varian was flight captain for Pan American Airways on Mexican and Central American routes, a post which he left to join his brother in developing the klystron.

### Air Corps Funds Allotted

Funds totaling almost \$2,000,000 have been allotted for Air Corps construction projects at Ft. Wayne, Ind., Airport and Maxwell Field, Ala., the War Dept. announced recently.

Eighty-three buildings for housing 1,900 officers and men have been authorized at Ft. Wayne at an estimated cost of \$1,327,906, while housing for 1,200 flying cadets at Maxwell Field will total approximately \$593,366. The War Dept. also announced that clearing and grading of sites for the Air Corps reception center at Jefferson Barracks, Mo., has been approved.

### New Air Corps Projects

Air Corps construction at five stations in southern U. S. and Puerto Rico totaling almost \$5,000,000 was announced during the past fortnight by the War Dept.

Largest appropriation was for \$1,515,090 for projects at Meridian, Miss., Municipal Airport; while \$1,441,340 was allotted for buildings and facilities at East Baton Rouge, La., Municipal Airport; \$1,205,550 at Eglin Field, Valparaiso, Fla.; \$294,341 at the Southeast Air Depot (Brookley Field), Mobile, Ala.; and \$190,500 at Borinquen Field, P. R.



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Northrop*



**A VETERAN AT TWO...** Back in the early twenties, when aviation was still in its adolescence, the supervisory personnel of the present Northrop Company was actively engaged in the aircraft industry. These men, who are responsible for today's Northrop planes, enjoy an average of over 16 years of aviation experience. Though its corporate existence reaches back barely two years, today Northrop Aircraft, Inc. is a veteran at two.

Now, when production is so all-important, this background of aviation experience accounts for the records being established at the Northrop plant. It is reflected, too, in the superior performance of Northrop built planes. This is another reason to WATCH NORTHROP.



Starting from scratch in March, 1939, the greatly expanded Northrop plant will soon house more than five thousand employees. Here, at record production speed, are manufactured planes and plane parts for the fighting forces of five democratic peoples.

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## Production Chiefs and Presidents



This photo was taken at Santa Monica, Cal., during conferences on mass production of airplanes attended by the presidents and production chiefs of the world's largest privately-owned aircraft factory, and the largest automobile manufacturing concern. Left to right: Charles Sorensen, production manager of Ford's River Rouge plant; Donald W. Douglas, president of Douglas Aircraft Co.; Edsel Ford, president of Ford Motor Co.; and Henry Guerlin, manager of the Douglas Santa Monica plant. Accompanied by Sorensen and Dr. George Meade, aircraft production chairman of the National Defense Advisory Commission, Mr. Ford recently visited the Douglas plant as part of the study for joint production of four-engine, long-range bombers by automotive and aircraft firms.

### Dr. Goodwin Heads Shell's Aero Dept.

Dr. Ralph T. Goodwin, formerly manager of fuel oil sales for Shell Oil Co. Inc., has been appointed manager of Shell's rapidly expanding aviation department. L. T. Kittinger, vice president in charge of marketing, announced late in January.

A. J. M. Hamon, well known in the industry, will be assistant manager of the aviation department.

Dr. Goodwin was in the chemical division of the U. S. Bureau of Aircraft Production during the World War. While in the chemical section of the engineering division of Army aviation experimental work at Dayton, he had charge of chemical research and inspection of materials going into aircraft production and products consumed in airplane operations. Later, he was on the technical staff of the Army Balloon School at Ft. Omaha.

Dr. Goodwin's first position with Shell came in 1932 as manager of the company's fuel oil department in St. Louis.

Maj. J. H. Doolittle, former manager of Shell's aviation department, was called by the government several months ago to serve as liaison officer between the Army Air Corps and aircraft engine manufacturers.

According to company announcement, Shell last year supplied approximately 31% of all aviation gasoline required by the U. S. government.

### Fuel for Planes

The American petroleum industry's output of aviation fuel of all grades has reached a record peak of 45,000,000 gallons a month, or more than 1,500,000 daily, according to American Petroleum Institute, New York City. Stocks in reserve have increased to more than 200,000,000 gallons, or about twice the largest annual consumption to date. Airplane consumption of gasoline totals less than 1% of entire annual motor fuel consumption, it is reported.

### Aero Fuel Output Surveyed

By Mar. 1, U. S. capacity to produce 100-octane aviation gasoline will be more than four times the total 1939 domestic demand for all grades of aircraft fuel, the American Petroleum Institute announced recently. Present capacity will be in excess of demand until late in 1941, the institute stated.

## Proposed Bill Would Replace CAB Examiners With Commissioners

Attorney General Robert Jackson on Jan. 24 sent to Congress a proposed bill recommending widespread changes in the procedures of administrative agencies, including the Civil Aeronautics Board and the Civil Aeronautics Administration.

One of the most drastic proposals, and one which would affect the CAB, was that providing for the appointment of \$7,500-a-year hearing commissioners.

The bill, together with a 1,000-page report, were prepared by the Attorney General's Committee on Administrative Procedure, headed by Dean Acheson, former under-secretary of the Treasury, and recently appointed assistant secretary of State.

The bill provides that the President, with Senate approval, shall appoint a \$10,000-a-year director of federal administrative procedure, who shall: conduct inquiries into practices and procedures of the agencies, make recommendations concerning such practices, receive complaints regarding the procedures of agencies, and recommend rules to simplify and unify provisions governing utilization of answers and other pleadings, issuance of subpoenas, etc.

### Hearing Commissioners

In each agency entrusted with the duty of deciding cases, the bill provides that there shall be appointed "hearing commissioners" at \$7,500 yearly. In an agency with five or more commissioners, there shall be an \$8,500 chief hearing commissioner. All commissioners would be nominated by the agency and appointed by the Office of Federal Administrative Procedure.

At the conclusion of a hearing, the bill states, a commissioner may certify to the agency tribunal any questions or propositions of law concerning which instructions are desired for a proper decision. The agency may either give binding instructions on the questions or require that the entire record be transmitted to it for consideration. A case may also be transferred to the agency "upon petition of any private party . . . for good cause shown."

clause is contained in the bill: "the absence of timely appeal to the agency tribunal, a decision of a hearing commissioner shall without further proceedings become the final decision of the agency tribunal, and such enforceable or reviewable to the same extent and in the same manner as though it had been duly entered by the agency tribunal as its decision . . . except that the agency head on its own motion direct that a decision of a hearing commissioner be reviewed by it after notice to the parties and within such period of time as may prescribe."

### Additional Provisions

It is also provided in the bill that judicial and prosecutive functions within the agencies shall be separated; that rules and regulations of agencies be regularized; and that administrative procedure be simplified.

In its 1,000-page report, the committee commended the CAB's "considerable and successful use" of the pre-hearing conference technique and recommended that it "develop, expand and emphasize" such technique.

Discussing CAB hearings, the committee termed "undesirable" the fact that certain analyses prepared by the Board's accounts and analysis division are available only to the framers of the final decision. It recommended that this be remedied.

Another important recommendation urged that the making and enforcing of safety regulations be under one authority, instead of divided between CAA and CAB as at present.

Government and private aviation circles in Washington were somewhat dubious about the merits of the bill. It was feared that the \$7,500 hearing commissioner jobs would be filled with political appointees who would need several assistants. The fact that a commissioner's decision could be final under the bill was welcomed, but it was pointed out that such decisions still could be appealed to the Board. "Highly idealistic" was the way one

### Aviation Gasoline Storage Project Put in Operation

A long-delayed program to purchase and store large quantities of 100-octane aviation fuel has been put into operation with the letting of Army and Navy contracts for approximately 46,000,000 gallons of aviation gasoline costing nearly \$8,000,000.

When originally projected by the Defense Commission, the program contemplated storing 7,500,000 barrels, using \$50,000,000 allocated for that purpose by the Reconstruction Finance Corp. Purchase of only 3,000,000 barrels was involved in a later plan, with a final cut to the present 1,000,000 barrels, using Army and Navy instead of RFC funds. Defense Commission officials, not satisfied with the curtailed program, wish to have 3,000,000 barrels in storage by the end of 1941 and are "encouraging" refiners to expand aviation fuel production capacity by 25 per cent.

Largest contracts to firms under the 1,000,000 barrel purchase went to Shell Oil Co. Inc. for \$2,530,876; Humble Oil & Refining Co., \$1,416,330; Phillips Petroleum Co., \$1,043,444; Standard Oil Co. of California, \$828,980; and Tide Water Associated Oil Co., \$510,725.





# The Birdmen's Perch

How about those Funnyboners? I want to hear more about those mistakes you made while learning to fly. Send 'em in, pals—here's your chance to confess and tell us why your instructor's hair turned white over night.

Major Al Williams, alias "Tattered Wing-Tips," Mgr., Gulf Aviation Products, Gulf Building, Pittsburgh, Pa.

## FUNNYBONER DEPARTMENT

Here's a boner I pulled while learning to fly:

I'd had about 2 or 3 hours' dual instruction and was practicing landings with my instructor. I'd completed several pretty good ones and was approaching the runway for another, when the instructor took over the controls.

I thought he intended to keep the controls—and he thought I'd take them right back again. The result was a very bumpy, but successful landing, with nobody at the controls at all!

Winton Smith, Mamaronck, N. Y.

## DON'T TRY THIS ONE IN YOUR BATH TUB!

The hot water tap on a bathtub will fill it in 4 minutes. The cold water faucet



will fill it in 6 minutes. And the drain in the bottom of the tub will empty it in 8 minutes.

With the drain open and both cold and hot water taps on, how long will it take to fill the tub?

## YOU'D BE SURPRISED HOW YOU CAN CLEAN UP

If you remember your high school chemistry, you'll recall that one of the first things you were taught was how to use a filter paper.

Probably one of your first experiments was when you took a cloudy, muddy solution and filtered it through a rough filter paper. You found that the solution came through crystal clear, and that the filter paper was stained dark by the residue.

But then, even though your filtrate was crystal clear, you again filtered it, this time through a finer paper. And this time, though the appearance of the solution was just as clear as before, you found to your surprise, that a fine residue had been left behind on the filter paper. You'd



made your solution even purer than you thought possible.

You might remember this experiment the next time you're buying oil for your plane. For though many oils look exactly alike, you'd be surprised how much extra impurity you can sometimes get out of them.

We know, because we refine Gulfpride by means of a special process—the Alchlor Process. And tests have shown that this Alchlor Process removes up to 20% more of the carbon and sludge formers found in oil!

Yes, we know that by taking the extra time and trouble, we can get a lot of extra impurities out of oil. That's why Gulfpride is the finest oil you can put into your motor!

## THIS MONTH'S WHOPPER (4 Stars)

Dear Major:

I had an old Jenny once, and for the last few years she's been setting out in my barn. Sorta hated to junk her because we'd had some good times together, Jenny and me.

I was thinking about that the other day—about getting old, I mean—when I spied a story about G.A.G. Well, it looked like this was just the medicine my Jenny needed. So I hauled her out of the barn and filled her up with G.A.G. And then the trouble began.

Say, I didn't hardly have time to get out of the way before little Jenny perked right up and the next thing I know she's circling over the barn and heading off towards the city.

All day long I waited pacing up and down the barn floor, and it was long about sundown when I heard a funny kind of sputtering and there comes Jenny.

Gosh, Major, that ship looked like it had met a couple of hurricanes with a tornado in the middle and when I got her back into the barn and kind of got over being so scared I says to her:

"Jenny, I allus said you was a well-behaved little ship. And you was. Now, where've you been all day?" And Jenny looked at me kind

of reproachful like and she says: "Say, Pop, who fed me that G.A.G. anyway?"

"Well," I says, "that don't answer my question. All by yourself you took off and all by yourself you spent all day in the city and all by yourself you come back again. Now what's the story?"

Well, this is Jenny's story:—"Pop, I met an Army Bomber—the handsomest Army Bomber! His approach was perfect. He wiggled his ailerons rather flirtatiously and I wiggled mine back. If it hadn't been for that G.A.G. I'd have been more of a lady!

"We glided along together—even had a couple of wing-overs. Then—then—well he settled down on a soft cushion of air and flipped his flippers invitingly. Pop, can you imagine how I felt? A dashing Army Bomber flipping his flippers at me, an old Jenny! And honestly, Pop, I'd reached the burble point so to speak. I felt like making a power dive for him, but I restrained myself and instead I just settled down too.

"Talk about speed, Pop! They must use G.A.G. in the army too. I'm afraid I completely forgot my excellent training, because after a bit of stalling around I—well—I'm afraid I skidded a little.

"And I don't care if I am a bit the worse for wear. Although my wings are a trifle tarnished and I can't hold my nose as high as before; although my struts and spars aren't what they once were; although my landing gear has collapsed and my shock absorbers were shocked off; although my motor is dead and my prop won't go 'round; I still say: More power to G.A.G.!"

D. D.

P. S. G.A.G. don't need no more power!

Gulf Oil Corporation and Gulf Refining Company . . . makers of



**GULF AVIATION PRODUCTS**

## 5 U. S. Firms Indicted As Magnesium Trust

Criminal indictments by a federal grand jury were recently brought against an alleged international magnesium trust accused of restricting the development and use of magnesium and magnesium alloys in the production of airplanes, bomb casings and other defense materials. Five American corporations, including Aluminum Company of America, Dow Chemical Co., General Aniline and Film Corp., Magnesium Development Corp., and American Magnesium Corp., were named, along with I. G. Farbenindustrie of Germany.

The defendants were charged with conspiring since 1927 to control and regulate the world's magnesium output, largely through world-wide patent pools. Department of Justice officials declared that the alleged conspiracy has created a serious shortage of foundry facilities for magnesium production in this country and is indirectly responsible for Germany's producing 400 per cent more magnesium than the U. S.

The indictments charge that all competing patents owned by the German firm, Alcoa and Dow have been pooled and utilized to prevent others from engaging in magnesium production. The Dow company, a selected list of its licensees, and American Magnesium Corp. now control all production in the U. S., it was alleged.

Plea of not guilty to violation of the anti-trust laws have been entered by the five U. S. corporations and seven individual American defendants. The court entered a similar plea for the German firm when representatives failed to appear.

## Control of Magnesium Firm Bought by Alcoa

Aluminum Co. of America has announced the purchase of full control in American Magnesium Corp. Already owner of half of the magnesium concern, Alcoa bought the remaining half from General Aniline and Film Corp., a firm which the government has declared to be German controlled. Announcement of the transaction followed a week after Alcoa, American Magnesium Corp., General Aniline and Film Corp., and three other firms had been indicted by a federal grand jury on charges of conspiring to create a world-wide magnesium trust.

"As requested by the Office of Production Management of the national defense program," the Alcoa announcement stated, "Aluminum Co. of America will start immediately the further expansion of operations of American Magnesium Corp. so that the manufacture of magnesium products by the latter corporation will be greatly increased."

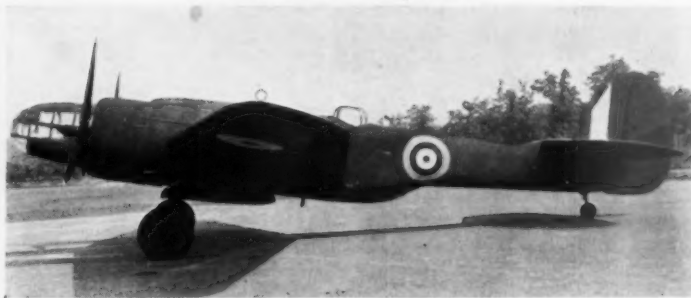
Alcoa declared that the purchase of full control in American Magnesium Corp. together with the construction of new plant facilities will cost several million dollars. New units will be established at Buffalo, N. Y., it was said, to augment those in Cleveland, Los Angeles and New Kensington, Pa.

"The manufacture of magnesium products by American Magnesium Corp.," Alcoa asserted, "has already been increased to 20 times the normal peace-time demands experienced by this corporation as late as 1938."

While contending that "the magnesium business has been an unprofitable one," Alcoa declared that it would continue its development of that metal to meet the present emergency from the defense standpoint.

Purchase by Alcoa of the alleged German controlled interest in American Magnesium Corp. is not expected to halt the government's anti-trust suit. Although one objective of the government's action is to end foreign control of magnesium patents, still another aim is to divorce the aluminum and magnesium industries. The government regards these two metals

## Meet the 'Maryland'



The British have officially named this speedy Martin attack bomber the "Maryland." It is being produced now in quantities by Glenn L. Martin Co. at Baltimore. Figuring largely in recent dispatches from the Mediterranean theater of war, the American ship is said to be doing effective work in desert warfare. It also is credited with taking the now famous "Taranto pictures," which were said to have refuted the Italian "no damage" claim after the havoc wrought by British bombers on the naval base. The naming of the Maryland follows closely the naming of the forthcoming Martin Baltimore, a new medium bomber being built to fit British tactical experience.

## Aircraft Production Tending Toward More Specialization, Seversky Says

The popular notion that planes will soon be "standardized" and rolled off the belt like so many cheap cars is entirely fallacious, Maj. Alexander P. de Seversky, noted airplane designer, said in a recent syndicated article for United Press. "The tendency, on the contrary, will be towards greater specialization."

"Increasingly, aircraft will be designed and equipped for maximum effectiveness in special tactical undertakings. In some, range will be sacrificed for bomb-load; in others, speed will be more important than range. The amount of armament and armor, fire-power and 'reach' will be deter-

mined by the tasks for which the craft are intended. True, certain basic types may be turned out in quantity, but even in those, protracted 'freezing' of design must be avoided, in the interests of flexibility."

Maj. Seversky called the various plans of certain automotive leaders and of the C. I. O. as "fantastic." Everybody seems to be listened to on the subject of air defense, he said, except the aviation industry. "The aviation industry, if consulted on the subject, would at least end numerical delusions. It would talk in terms of function—the job to be done by a given plane—rather than in staggering arithmetic."

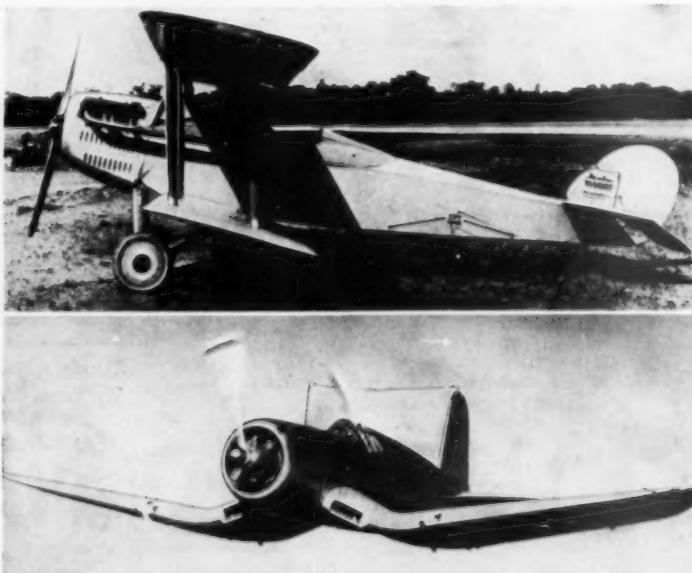
as competitors whose production should be disassociated.

Defense Economic Issues Reviewed  
Brookings Institution, Washington, D. C., has issued a pamphlet by Harold G. Moulton entitled "Fundamental Economic Issues in National Defense." The publication discusses briefly financing of the defense program, commodity price inflation and economic readjustment during and after the emergency.

## Frank Mara Joins U. S. Aviation Underwriters

Frank Mara, for many years with Stinson Aircraft, has joined U. S. Aviation Underwriters in New York City. Frank's brother, W. A. Mara, continues as sales manager of Stinson. The departure of Frank breaks up the famous "Mara Boys" combination known throughout the private plane industry for many years.

## 1918—Then and Now—1941



Twenty-three years of aeronautical development is pictured here. In the upper picture is an airplane of 1918—the original Vought VE-7 advanced trainer. In the lower picture is the Vought-Sikorsky XF4U-1, heralded as one of the fastest planes in the U. S. today. In 1918, when the Army ordered 1,600 of the VE-7's (only to cancel the order with the signing of the Armistice), the 1,850-hp. Pratt & Whitney engine, which drives the XF4U-7 through the air at a maximum speed of more than 400 mph., would have been considered incredible.

## Patterson Opposes Mass Plane Output

Reporting on defense progress before the Los Angeles post of the Arms Ordnance Association, Robert F. Patterson, under secretary of War, recently declared that the U. S. must continually make adjustments between perfection and production in aircraft manufacture.

He emphasized that the aircraft industry must decide upon a definite policy which would provide for the corporation of changes without crippling output. "If the change in design will cause too great a delay, we will not make it. Better a 98 per cent perfect airplane in existence than a 100 per cent perfect airplane on paper."

Touching upon the problem of standardization, Patterson said that the nation should take advantage of many new developments being produced in Europe's aerial warfare. "We would lose that advantage if we went into tremendous mass production. The self-sealing gas tank, increased armament, heavier armor—we are able to dovetail all of these into our airplane adjustments and make more effective fighting ships and better bombers. Too early standardization of type would lose us the fruits of this laboratory that Germany and England are operating."

Declaring that the defense situation is not as bad as some people try to paint it, Patterson said that the Air Corps is expanding on schedule. "At the end of last June it consisted of 3,322 regular and reserve officers, 1,000 flying cadets and nearly 46,000 enlisted men. Today we have 6,180 officers, 7,000 flying cadets and 83,000 enlisted men."

"The War Dept. has always maintained that 18 months—dating from the fall of France—would be required to get the defense program going full blast. We shall be hitting our stride sooner than we had hoped."

## CAA Losing Personnel In Defense Program

A substantial number of Civil Aeronautics Administration employees, mostly inspectors, has been called to active military or naval duty, and indications are that the trend will continue.

Elwood Cole, the CAA's well-known state coordinator, left Feb. 1 to go on active duty in the Navy's personnel procurement division.

Other personnel called include Raymond B. Hurst, associate aeronautical inspector; Ben Z. Redfield, aeronautical inspector, and George O. Gjoerloff, CPTP flight inspector, all of New York; John R. Hoyt, associate aeronautical inspector, and James E. Howarth Jr., aeronautical inspector, both of Chicago; John J. Lynch, associate aeronautical inspector, Kansas City; Virgil S. Dietrick Jr., holding the same title in Santa Monica; Carl W. Nelson, assistant aeronautical inspector, Seattle, and Robert A. Gardner, aeronautical inspector, Seattle.

It is known that numerous employees of the CAA and CAB expect to be called to active duty with the Marines in the near future.

Denis Mulligan, well-known Washington aviation attorney, is on active duty with the Army.

## Flivver Air Corps

Col. Roscoe Turner, vice president of the National Aviation Training Association, has proposed the formation of an armada of 200,000 converted flivver planes manned by private pilots for home defense. In a newspaper interview, Turner suggested that each plane could be fitted with a rack for a 100-lb. bomb or two 50 pounders and the cockpit enclosed with 50 pounds of armor. Send them out in droves and you can blow any invading army to pieces before it got a start," he asserted. "You could fight off any ground force from any direction."



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\* STANDARD U. S. ARMY TIME OF OVERHAUL FOR N. A. A. TRAINERS 2500 HOURS

## Boeing School Expanding; Trains Aircraft Mechanics for Army

In addition to regular classes, the operation of a co-pilot school for United Air Lines, and the conducting of home study courses for UAL employees on a national scale, Boeing School of Aeronautics, Oakland, Cal., is participating in the national defense program by training large groups of Army enlisted men as aircraft mechanics.

Training of these mechanics, a big project in itself, started last October after the school spent \$160,000 for necessary facilities. A total of 300 soldiers can be handled at a time.

Eight buildings have been erected for the Army work, including vocation shops, barracks and a mess hall. Airplanes, engines and shop equipment is available to instruct the soldiers in the general principles of aircraft construction and repair, engine maintenance, care of materials and tools and the maintenance and inspection of the entire airplane.

### 6-Month Courses

Duration of the training period is six months, with the men selected by the Army arriving at the school in groups of twenty-five at two-week intervals. Supervision of the soldiers is in the hands of Army officers, with the Boeing School staff directing their instruction.

The United home study program, object of which is to keep UAL employees up to date in aeronautical operations and to permit them to advance themselves in the industry, has had so great an increase in the past six months that the school has located instructors in New York, Chicago, Cheyenne and Salt Lake City to act as educational advisers.

This program is under the supervision of D. B. Woodyatt, head of the school's educational service department. Division counselors are Jack C. Curtis in New York, B. C. Hunkins in Chicago, E. H. Johnson in Cheyenne and Alfred M. Neff in Salt Lake.

Training of co-pilots for United is under-taken at Tracy, Cal., on an airport leased for five years. Candidates, selected exclusively from college students who have completed the first and second stages of the CPT program, are being inducted in groups of twenty every four weeks for five months' instruction.

The co-pilot program includes approximately 140 hrs. of advanced flight

instruction and 425 hrs. of ground school. The final month of training is spent at the Oakland school.

Of the thirty-nine students who completed regular studies at Boeing School in the quarter ended Dec. 17, twenty-five were called to employment in the aviation industry so quickly that graduation exercises had to be abandoned. The school started its new quarter with approximately 300 students.

The main unit of the school, which is headed by T. Lee, Jr., at present shares two hangars with United Air Lines. In June when UAL moves to San Francisco airport, the school will take over the entire space.

The teaching staff numbers forty-one, an increase of eleven since last May, all specialists and veterans with up to twenty-six years' experience in their fields. There are twenty shops, laboratories and classrooms.

In the school's fleet of planes are twenty trainers, including Boeing 203b's, a 40B, a Stearman, Howard, Stinson Reliant, Piper Cubs, Fairchild's and Wacos. Students training as airline pilots are given instruction in United twin-engine equipment.

### New WPA Program to Train 5,750 Ground Servicemen

As adjunct to the nation-wide vocational training of defense workers which WPA is operating in cooperation with the Defense Commission and the Office of Education, a special WPA project for the training of aviation ground servicemen received presidential approval recently. With \$1,429,690 available, a maximum of 5,750 persons from WPA rolls will be given from two to three months training at some 100 airports to be designated by the CAA, after which it is expected the trainees will be privately employed.

The program scheduled to be in full operation within 60 days provides that from 10 to 15 men be given instruction at one time at each airport selected.

### Chamberlin Opens Philly School

Col. Clarence D. Chamberlin, operator of three aircraft training schools in New Jersey, has opened a unit with capacity of 1,000 students in Philadelphia, Pa., for training of aircraft sheet metal workers.

### Comdr. Knox Transferred

Comdr. Cornelius V. S. Knox, head of the industrial section of the Naval Air Station, Lakehurst, N. J., has been transferred to Akron, O., as inspector of naval aircraft at Goodyear Aircraft Corp.

## 8 SCHOOLS OFFER AIRCRAFT TRAINING

### N. Y. Area Engineering Colleges Unite in Program to Meet Shortage of Skilled Workers

Eight engineering schools have united to form the Defense Training Institute of the Engineering Colleges of Greater New York in an effort to meet a threatened shortage of skilled technical personnel in the aircraft plants of the area. The project is organized under the defense education program of the U. S. Office of Education and will be financed through funds from the \$9,000,000 Congressional appropriation for emergency educational facilities to promote national defense.

Background for special advanced courses in aerodynamics, stress and strain analysis, metallurgy, and machine and airplane design is offered free of tuition. A series of six courses will run for 20 weeks and may be supplemented by an additional 10 weeks' work for the most promising students.

Prospective applicants must be more than 18 years old and have a high school education or its equivalent. Required subjects are three years of high school English and one year each of algebra, geometry, and physics or chemistry. Those who have specialized in mechanical drawing, intermediate algebra and trigonometry are given preference.

### Courses

Acceptable students will take thorough courses in mathematical analysis, a review of algebra and trigonometry through differential calculus; physics of engineering; applied mechanics; elements of drafting; and chemistry of engineering materials. Part I of the curriculum provides for 570 classroom hours and 555 hours of home study.

The technical school will have classrooms in the Brooklyn Law School, Brooklyn, N. Y., and laboratory mainly at Pratt Institute, at the other seven cooperating colleges and at nearby aircraft plants.

Among the aircraft firms expressing interest in the project are BG Corp., Brewster Aeronautical Corp., Edo Aircraft Corp., Fairchild Aviation Corp., Grumman Aircraft Engineering Corp., Kollsman Instrument Division of Square D Co., Liberty Aircraft Products Corp., Ranger Aircraft Engines Division of Fairchild Engine and Airplane Corp., and Sperry Gyroscope Co. Inc.

Institutions participating are Brooklyn Polytechnic Institute, College of

### Following His Father

James H. Doolittle Jr., son of Maj. James H. Doolittle, noted U. S. Army pilot in World War I, has been placed on the eligibility list for appointment as an Army aviator cadet. Young Doolittle said he would leave his junior studies at Purdue University and apply immediately for enlistment in the month scholarship course if his appointment is granted. Maj. Doolittle is now military adviser to the Industrial Aviation Committee in the Detroit region.

the City of New York School of Technology, Columbia University School of Engineering, Manhattan College School of Engineering, New York University College of Engineering, Pratt Institute School of Science and Technology, Webb Institute of Naval Architecture and Cooper Union School of Engineering.

### McKenzie is C-W Tech's New Director of Training



McKenzie

Appointment of Otis D. McKenzie to the position of director of training of Curtiss-Wright Technical Institute, Glendale, Cal., was announced on Feb. 5 by Maj. C. C. Moley, president. In his new position, McKenzie will have supervisory control over all departments of the school of aeronautical engineering and master aviation mechanics. In the last seven years, McKenzie has been registrar of C-W Tech, reputedly the nation's largest aviation technical school, and has been connected with the school since it was formed in 1918. He has personally enrolled each of the thousands of men who have passed through the school.

C-W Tech now has an enrollment in excess of 2,000 students of whom approximately 1,500 are civilians, and the remainder Army enlisted men in training as Air Corps mechanics.

McKenzie is a pilot and holds the rank of first lieutenant in the 113 Observation Squadron of the California National Guard.

## Army Ups Pilot Training to 12,000 Yearly by Adding 11 Civil Schools

The award of contracts for primary flight training to 11 civilian schools, which will make possible the enrollment of 2,383 new students every five weeks, and provide an output of 12,000 pilots yearly, was announced late in January by the War Dept.

The 11 new schools will give the Air Corps a total of 28 schools engaged in elementary pilot training. The new ones include:

Air Activities of Texas Inc., Corsicana, Tex.; Brayton Flying Service Inc., Cuero, Tex.; Embury-Riddle Co., Arcadia, Fla.; Graham Aviation Co., Americus, Ga.; Lou Foote Flying Service, Stamford, Tex.; Oklahoma Air College Inc., Oklahoma City, Okla.; Palo Alto Airport Inc., King City, Cal.; Pine Bluff School of Aviation, Pine Bluff, Ark.; Rankin Aeronautics Academy Inc., Tulare, Cal.; Southern Aviation School, Camden, S. C.; and Southwest Airways Inc., Phoenix, Ariz.

The first class at each school will start about Mar. 22, 1941, and new classes will enter every five weeks thereafter. About 100 cadets will be in training at each school, and there will be 2,383 cadets in training at all civilian schools on Mar. 22.

The original plan for training of 7,000 pilots annually was upset when the Air Corps launched its 54-group expansion

program a few months ago. Maximum rate of enrollment under the 7,000-pilot program was to have been reached Nov. 30, 1940, with 1,292 entering, but with announcement of the expansion program training at existing civilian schools was stepped up so that 1,430 students were admitted on that date. The Jan. 4, 1941, class jumped to 1,688, and a similar number is expected to enter the Feb. 15 class. With the addition of the 11 new schools the training rate will increase to 2,383 for the Mar. 22 class, and the Air Corps states that "this is the number necessary to provide an output of 12,000 pilots a year under the expanded program. Both the February and March classes are now ready fully enrolled."

The size of classes enrolled at civilian schools since May 18, 1940, is as follows: May 18, 475; June 29, 599; Aug. 3, 889; Sept. 14, 1,121; Oct. 19, 1,327; Nov. 30, 1,430; Jan. 4, 1,688; Feb. 15, 1,688; Mar. 22, 2,383.

"Plans for future classes contemplate enrollment of students in groups corresponding to the size of the class on Mar. 22, 1941," the Air Corps states.

Following elementary training at the civilian schools, basic and advanced training will be given at the three Air Corps Training Centers: Gulf Coast Training Center, Southeast Training Center and West Coast Training Center.

### Boeing Expands for Army Work



Unit of eight buildings in foreground have been constructed at Oakland Airport by Boeing School to train aircraft mechanics for the Army. The three long buildings in the center are barracks, and the others are shops. Boeing's main quarters are in two hangars shared with United Air Lines, at right in background. At left of Army unit is the airport's seaplane base.



# Aviation's School of the Hour!

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Tec's graduate engineers and mechanics have permeated the industry to many of its most important positions. And now, with a proved and tested curriculum and unsurpassed faculty of practical engineers and technicians, we feel a profound satisfaction in daily filling the industry's call for "men trained to service order." These men are the aircraft industry's greatest asset. They INSURE utmost efficiency in production and operation, and ASSURE world supremacy in point of aircraft perfection for our America! We're proud that Curtiss-Wright Tec is supplying them. 1447 civilian students and 604 Army enlisted men are now enrolled at Curtiss-Wright Tec. This school is prepared to, and can, expand to approximately 5,000 students if necessary in the interests of national defense.

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## Brazilian Air Unit

(Continued from page 1)

Communications, with transfer of personnel, material and credits.

The Army Aeronautics Arm, the Naval Aviation Corps, and the National Council of Aeronautics are all abolished. From now on all of Brazil's aero clubs must depend on the Ministry of Aeronautics for permission to establish themselves and to operate.

All air transportation and all development of aviation comes under the authority of the ministry. The new minister will have the same honors, prerogatives and salary as the other ministers.

The minister's cabinet will be constituted by a chief, a juridic consultant, two military assistants, two adjutants, two civil cabinet offi-

cers, and two cabinet functionaries. The minister will have eight technical assistants, of which two will be civil and six military, appointed in commission and freely chosen.

Under the minister will be created the National Air Forces which will represent a consolidation of the aeronautical branches of the Army and Navy. Thus, not only is a separate air force created, but this air force is subordinate to a Minister of Aeronautics who holds a rank equal to that of the Army and Navy. The ministry is given considerable power to reorganize the departments under his control. There will be no aeronautical authority in Brazil outside the Ministry of Aeronautics.

### Army Won't Compete

Although the Army increasingly is using its own air transport system developed over a period of years, it is understood that only government materiel will be carried in Army planes. Thus the Army will not be competing with commercial airlines in hauling cargo, especially cargo pertaining to national defense. Manufacturers who must ship parts and equipment by fastest transportation means to national defense factories must use commercial transports. Army transport planes fly on regular schedules between Army bases but carry only government property and personnel.

### Stainless Steel Trainer



Delivery to the War Dept. for testing of a new basic trainer, the XBT-12, by Fleetwings Inc., Bristol, Pa., was announced on Jan. 28. Styled in stainless steel, the craft is powered by a Pratt & Whitney R-985 engine, producing 450 hp. at 2,300 r.p.m. Approximate gross weight is 4,400 lbs. Facilities of the XBT-12 provide for a student and instructor in the canopied cockpits. Complete flight, propeller and engine controls are located in the front cockpit, while the rear cockpit has the primary flight controls and throttle, mixture and propeller controls only. A radio command and interphone set also forms part of the equipment, with controls in both cockpits.

Equipped with a Hamilton Standard, controllable, two-position, two-blade propeller, the XBT-12 has a wing span of 40 ft., length of 29 ft. and is 104 in. high. Fuselage is constructed in three basic sections of spot-welded, stainless steel. Engine mount is of chrome molybdenum steel. Wings are of a cantilever type and are fitted with slotted flaps. Fixed landing gear is of full cantilever type with an air-oil strut. Tail wheel is full steerable and swiveling.

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### Precision Plus



Three new Army Bell P-39 (Airacobra) interceptor pursuit planes, piloted three young Air Corps fighting pilots went through this difficult formation maneuver immediately after delivery from Bell Aircraft Corp. at Buffalo. The pilots are from the pursuit group at Selfridge Field, Mt. Clemens, Mich. The Airacobra is under construction for the Air Corps and the British RAF.

### United Air Lines

(Continued from page 1)

periods. Since each engine requires a considerable period in a test stand before it is ready for delivery, the testing period has become a bottleneck to the extent that commercial engine testing interfered with the testing of military engines. By shipping "green" assembled engines to Cheyenne for the final work, the East Hartford test stands could be used exclusively for military engines.

The United offer to act as a clearing house for normal production lines, thus speeding military output, has been noted as another evidence of the usefulness of the air transport industry for national defense. The Air Transport Association, through its president, Col. Edgar S. Gorrell, already has offered to give seat priority when necessary to those properly certified as traveling on the government's defense business.

### Express Increases

The airlines have reported recently the assigning of additional personnel to the handling of air express shipments that are growing in importance under the production for the defense program. Only recently United removed all seats from a 21-passenger DC-3 to make possible an overnight shipment of special aluminum tubing from Pittsburgh to the Lockheed factory at Burbank, Cal.

With Army transports moving increasing tonnage of Army equipment and materiel by air, it is predicted that manufacturers will make unexpected cargo tonnage demands upon the scheduled airline operators during coming months.

One vital problem faced by the commercial aircraft priorities committee is that of furnishing maintenance parts for older type engines that are still dependable power units, but not now in production.

It is reported that OPM officers who are seeking increased production through uniformity of product, believe it will retard production less to give commercial aircraft users new production engines than to stop the normal procedure to get out parts for engines not now being manufactured.

It is understood that OPM officials look with favor upon United's suggestion of using airline test facilities to relieve engine factory production lines of a portion of their burden.

### Slidefilms Aid Pilot Training

Introduction of slidefilms as an educational aid in pilot training course has been made by the Jam Handy organization, picture service firm with main offices at 2821 E. Grand Blvd., Detroit, Mich. The pilot training course, in three kits of twenty-five film strips, is based on ground school material of CPTP and is used currently by a number of colleges participating in the CAA program.

### Off the Beam

(Continued from page 4)

World-Telegram pulled the worst boner by illustrating the TWA St. Louis accident on page one with a large photo of a four-engine Stratoliner (for at least one edition). A correction followed. . . . And Life not long ago didn't help neighboring relations with Brazil when it showed President Vargas flying in Commodore Clippers which it said were owned by Pan American Airways. Truth is that PAA sold the Commodores to Brazil some time back and the Brazilian Army is very proud of them.

**MORE PROOF** that it's safest to fly: crews have been lost on trans-Atlantic ferrying of bombers to England, but crew members have been lost returning by boat.

**NOT LONG** ago a single shipment of more than 1,000 "black light" units left Electronic Laboratories Inc. in Indianapolis for use in Army aircraft, the shipment being the largest single release in the history of the company. "Black light" is a name popularly applied to the emanations of lamps with which control panels are equipped, giving off no visible light, yet making it possible to see the instruments. The near ultra-violet light has all visible rays removed, but still retains the proper spectrum to cause fluorescent paint to glow.

**REGULATION** New York Telephone Co. booths have replaced the 24 city built booths in LaGuardia Field's administration building following complaints that the original installations were not soundproof, that the lights failed to function and that doors jammed. The city built the booths to conform to the building's general architectural plan, but a climax was reached a few weeks ago when a passenger became locked in a booth and nearly missed his plane.

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# Air Cargo Would Speed Subcontracting

## Wide Dissemination of Defense Work

### Places Demands on Existing Carriers

Tools, Parts and Supplies Most Urgently Needed Must Travel by Air; Fast Sky Trucks Seen as Useful in Providing Essential Materials of This Hemisphere

By WILLIAM M. SHEEHAN

Editor's Note: This is the second of a series of four articles on air freight by William M. Sheehan.

ECONOMISTS predict that during the next five years the U. S. will spend the colossal sum of 50 billion dollars for rearmament. What sections of the country will benefit most from the spending is indicated by the accompanying map, which shows the distribution of all defense contracts during the first half year of rearmament, including the allocations for airplanes and parts. It will be noted that the chief centers of activity—the Atlantic seaboard, the Midwest, the South and the Pacific Coast—are separated from each other by hundreds of miles in some cases, by thousands in others.

In this era of three-dimensional warfare, destructive air bombing has made decentralization of industry the order of the day. England has her "shadow system." Germany's vast aircraft industry is housed in scores of well-camouflaged plants scattered throughout the Reich, even in her new province of France. We, too, have decentralized our vital war industries. But whereas British or German inter-communication is a matter of a few hundred miles at most, with us as many as 3,000 miles may be involved.

Now the chief burden of caring for the unprecedented transportation demands imposed by the wide dissemination of defense work must of course fall heavily upon our existing cargo services. Railroads, highways, lakes, rivers and canals will come in for plenty of expansion before we are through. But a portion of the transport burden, those materials, tools, parts and supplies most urgently needed, will simply have to be shouldered by the airways.

### Aero Industry an Example

Our vital and lagging aircraft industry is an outstanding example of the need for speedy cargo service, with so much assembly work done on the Pacific coast, practically all engines and accessories made in the East, and high mountain ranges and several thousand miles separating the two industrial sections. Douglas Aircraft has sublet something like \$175,000,000 of defense contracts in more than 30 states. Pratt & Whitney and Wright Aeronautical have farmed out over 50 per cent of the man-hours involved in their engine construction work. Martin, North American and Consolidated are occupied with putting their eggs in more than one basket, with their new subsidiary plants in Omaha, Kansas City and Tulsa respectively. If, as seems likely, a large part of the job of building 50,000 warplanes is distributed throughout the automobile industry, we shall probably see some decentralization that will make Hog Island shipyards' 2,300 subcontracts during World War I look like small potatoes indeed.

Many other military necessities are in a similar fix. Take the Sperry

we have plenty of resources and ample labor reserves. The one commodity of which we are short, the want of which defeated France, and could defeat Great Britain, is time.

Saving time is one thing air freight is good at. Even when utilized at an economically slow cruising speed, the sky truck is at least three or four times as fast as any surface carrier. Put all vital rearmament work on a thrice faster transport basis, and months, maybe years, could be trimmed off the time needed to make us secure against all contingencies.

To be sure, it will take time to develop all the cargo planes, airports and trained personnel that are necessary for any large-scale air freight enterprise. But, as our Chief Executive said of defense activity in general, it will never be earlier. If we act now, we will have appreciable results within a year, which will be four years ahead of when the last ship for our "second navy" will leave the ways—probably years ahead of the realization of a 50,000-plane air force.

The element of expense deserves some mention. Mother Nature sees to it that, when it comes to motion, we don't get something for nothing. The faster the transport service, the more expensive to operate. But now is hardly a good time to be frugal. The twice-rail cost indicated in the previous article would make an insignificant addition to the total rearmament bill, even if every bit of transportation were affected in sky trucks.

If no other consideration of national defense justified this increased cost of transportation, the vulnerability of surface routes would warrant it. In case of enemy bombing, highways, railroads, canals, could be rendered useless by a single hit,

whereas sky truck traffic could be stopped only by destroying the vehicles themselves. A great fleet of sky trucks, able to change their route on a moment's notice or alight on any straight bit of roadway or level field, would be one of our strongest assurances that, come what may, the vital processes of rearmament will continue.

### Freight Equipment Lacking

But, to come down to facts, adequate air freight equipment is lacking, here and now. If every transport in the U. S., all of which are sorely needed in passenger, mail and express traffic, were converted to freight use, there would be less than about 400 airplanes available. That many sky trucks would be able to haul no more than a single train of railroad freight cars.

Fortunately, transports are admirably suited to joint production by automobile and aircraft manufacturers. No other type of airplane, least of all the combat plane, lends itself so readily to a semi-mass production process, because none has a more stabilized and standardized design. This is illustrated by the useful German sky truck, the Junkers Ju 52 3/m, which is essentially the self-same model produced six years ago. It is significant, incidentally, that the Germans began mass production of this Junkers as long ago as 1935.

To the 50,000 surface trucks and the 200 marine cargo ships which our government recently requested of Congress for emergency transport purposes should be added at least 5,000 industrial sky trucks of one or two current designs. These air freighters, to be made in the interest of expediency by the collaboration of our automobile and aviation industries, (Turn to page 21, col. 1)

bombsight, the three-inch anti-aircraft gun—of which only 450 were in existence in the U. S. several months ago—or the anti-tank gun—of which we had only 250 at that time. Armaments such as these are purposely built piecemeal in dozens of scattered plants and then assembled in a single arsenal.

Anyone who has had experience in this sort of manufacture doubtless knows how much shuttling back and forth of parts is necessary, how much precious time can be lost on an assembly line for want of a single, trivial "outside production" component.

### Time Is Short

FOR THE great task of construction for total defense, which will probably be with us for years and is more likely to grow than shrink,

## Distribution of Defense Contracts by States

June 13—Nov. 30  
(In Thousands of Dollars)



## Piper Equips Cruiser, Coupe With Starter

Piper Aircraft Corp. has announced the installation of starters on both Coupe and Cruiser models as standard equipment. Finding electric starters impractical because of weight and price, Piper adopted a new device employing a shock cord and weighing less than 10 lbs.

The shock cord, approximately 10 ft. long, is attached to the rudder post and extends forward inside the fuselage. It is fastened to a cable which runs under the cockpit and around a pulley to the starter. Tension is developed by turning a crank in the instrument panel, and the engine is turned over by pushing the crank in, thereby engaging the starter with the engine. Power is sufficient to turn the engine two complete revolutions. When not in use, the crank is removed from the instrument panel.

The starter, which is mounted on either Continental or Lycoming geared 75-hp. engines, was developed by Mechanical Products Inc., Jackson, Mich.

## CAB Amends Regulations for Civil Plane Accidents

Any civil aircraft accident resulting in serious or fatal injury to any person, or believed to have resulted from a structural failure in flight must be reported to the Civil Aeronautics Board or Civil Aeronautics Administrator immediately, according to an amendment to the Civil Air Regulations effective Feb. 1.

If a non-airline plane is involved, the pilot is responsible for notification "in person or by cable, telegraph, telephone, or radio," but if he is incapacitated, the owner or lessee or any other person who authorizes the operation of the aircraft is charged with notifying the authorities. In case of airlines, the company is responsible for notification.

Following immediate notification, the pilot or owner must prepare a written report of the accident on forms supplied by CAB and submit the report to nearest branch office "without delay." The amendment outlines in greater detail than the original regulation the conditions which permit the removal of wreckage.

## New Navigation Manual

A new edition of the Aircraft Navigation Manual, published by the Hydrographic Office of the Navy, has been placed on public sale.

Subjects covered by the manual include definitions of terms used in navigation, general descriptions of charts and publications relating to air navigation, the principles of dead reckoning, radio and celestial navigation and meteorology, and a brief summary of the airway systems of the U. S.

## Single-Place Glider in Production



Said to be the only single-place utility glider in actual production in the U. S. today that carries full CAA certificates, the model BG-6 Briegleb Utility Glider shown here is produced by Briegleb Aircraft Co., which also manufactures a larger two-place job, at Van Nuys, Cal. Type certificate No. 6 and production certificate No. 21 were issued on the BG-6. The new glider's set of tapered wings are interchangeable with the standard wings which convert the Utility into an efficient soaring plane, according to company announcement. When equipped with the tapered wings the plane is designated the model BG-7.

Production is now started on the two-place BG-8, which will be one-quarter larger than the BG-7. The fuselage of this craft is built of plywood.

Briegleb soon will have in operation a glider flight instruction school near Van Nuys, which will be the first glider school west of the Mississippi River, using CAA licensed gliders and CAA certificated commercial glider instructors. Over 40 student enrollments have been received, it was said.

## Aero Bookshelf

**TRANSPORTATION; ECONOMIC PRINCIPLES AND PRACTICES**, by E. R. Johnson, G. G. Huebner, and G. L. Wilson; D. Appleton-Century Co.; 35 W. 32d St., New York, N. Y.; 666 pp.; \$4.

In this book each of five kinds of transportation, railroad, pipeline, air, water and highway, is discussed, special care having been taken to give to each type of agency or transportation its appropriate portion of the treatise as a whole. Roughly one-tenth of the book is devoted to air transportation.

As a compendium of important first flights, as a general description of the development of air passenger, mail, and express service, and as a brief sketch of various laws which from time to time have been enacted to govern aviation, the book will doubtless be informative to those having no previous knowledge of the subject. However, the title is misleading to readers looking for a keen analysis of the economic principles underlying transportation. The material in the air transportation section in particular is primarily historical and descriptive rather than functional and analytical.

Although the book is of recent publication, the authors have not included statistics or developments beyond 1938.

Certain statements, such as the statement that a 32-hour transcontinental air mail schedule was established in 1924 and has been maintained ever since, and that the Atlantic and Gulf Coast Airline is a representative short airline like Continental Air Lines, reflect either inaccurate knowledge or hasty workmanship.

Ocean mail subsidies, both of American flag and foreign flag carriers, are discussed in some detail. Air mail subsidies, if any, are not touched upon other than the mere statement that temporary government aid to airlines is justified.

The authors close with two chapters on the coordination of transportation in which they favor the ultimate consolidation of all transportation legislation under one agency such as a reorganized ICC. Specifically they recommend legislation which would facilitate consolidation of railroads, insure rates which would provide a fair return when averaged over good years and lean years and regulate waterways in the same way as other transportation media.

F. A. Spencer  
Air Transport Consultant  
Brookings Institution  
Washington, D. C.

**CAREERS IN AVIATION**, by Ben B. Follett; Waverly House, 156 Boulton St., Boston, Mass.; 254 pp.; \$2.00.

Offered as a vocational guide to aviation, this volume canvasses the job opportunities in today's most rapidly expanding industry, explaining the jobs to be done, requirements involved and ranges of compensation to be expected.

Follett writes with all the feeling of one who has lived aviation for over 22 years, in a rambling, conversational style, aimed to induce the non-aerolist to peek at and survey "the greatest star in today's transportation-business firmament." In addition to furnishing valuable counsel, he accomplishes the literary objective of holding interest, despite a liberal sprinkling of clichés and rusty truisms. L. E.

## DeVilbiss Opens Branch

A new sales and service branch was opened recently at 1280 W. Washington Blvd., Chicago, by DeVilbiss Co., manufacturer of spray painting equipment, exhaust systems, air compressors and hose.

## Aeronautical Charts

New editions of aeronautical charts now available from the U. S. Coast and Geodetic Survey, Washington, D. C., from recognized dealers at major airports. Pilots are warned not to use charts when new editions are available.

Regional charts, a series of 17 maps at 1:1,000,000, sell for 40c; direction finding charts, a series of six scaled at 1:2,000,000, sell for 40c; and sectional charts, a series of 87 scaled at 1:500,000 sell for 25c. On orders grossing \$10 or more, including assortments, there is a 33 1/3 discount.

## New Regional Aeronautical Charts

16-M. Dec. 1940. Size, 19 x 37". Located in latitude 28°-32° north, longitude 87° 30'-97° west, covering an area of about 119,000 sq. mi.

The 11th of a series of 17 regional aeronautical charts to be published, and embraces the area covered by sectional aeronautical charts Beaumont and New Orleans, and portions of Austin, San Antonio and Mobile. It is lithographed in nine colors, showing airports and their names, airways, beacons, compass roses, isogonic lines, radio facilities, etc., in radio ranges in pink; railroad and topographic features in black; areas of cities in yellow, and one gradient tint.

## New Edition of Regional Aeronautical Chart

17-M. Nov. 1940. Size, 32 x 33". Located in latitude 25°-32° north, longitude 80°-87° 30' west, an area of some 278,000 sq. mi. Gives accumulation of changes since last edition.

## New Editions of Sectional Aeronautical Charts

**ARCOOSTOOK**, Nov. 1940. Size, 26 x 38". Located in latitude 46°-48° north, longitude 66°-72° west, an area of about 47,000 sq. mi. Caribou radio range and civil airways added and accumulation of changes included.

**YELLOWSTONE PARK**, Dec. 1940. Size, 20 x 39". Located in latitude 44°-48° north, longitude 108°-114° west, an area of about 47,000 sq. mi. North leg of the Billings radio range realigned, civil airways added and changes accumulated since the last edition included.

## Taylorcraft Introduces

### 2-Place, Tricycle Trainer at Building Dedication

Taylorcraft Aviation Corp. introduces its new two-place tandem tricycle landing gear trainer at the formal dedication of the company's new factory and office buildings in Alliance, O., Feb. 5. Photographs and specifications of the new trainer were not available as this issue went to press.

The \$200,000 expansion gives Taylorcraft the most modern and complete lightplane manufacturing establishment in the industry, equipped to produce 3,000 airplanes in 1941. The company reports unfilled orders for over 200 planes.

The dedication was featured by a civic ceremony and a distributors' meeting.

## The NATA Bird



The above design has been submitted to members of the newly formed National Aviation Training Association as an emblem of the organization. The insignia was prominently displayed in Vol. 1, No. 1 of "The N.A.T.A. Climber," official publication of the association, which is issued from national headquarters, 214 E. Armour Blvd., Kansas City, Mo. William A. Ong is president of NATA.

## WORLD'S PREMIER AIRPLANE FABRIC

LIGHTER

STRONGER

SMOOTHER

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SUNCOOK MILLS - 40 WORTH ST. - NEW YORK, N. Y.

Leading Manufacturers of Fabric and Tapes for the Aircraft Industry.

FLIGHTEX FABRIC

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CAL-AERO ACADEMY

GLENDALE - ONTARIO - OXNARD - CALIFORNIA

ADDRESS ALL CORRESPONDENCE TO GRAND CENTRAL AIR TERMINAL GLENDALE LOS ANGELES CALIF.

Chief of the Air Corps,  
Washington, D. C.

Dear Sir:

This will acknowledge receipt of Air Corps  
Bulletin W-1876 entitled, "Comparative Analysis of  
Civil Flying Schools - Military Personnel Trained".

It was very gratifying to learn from this  
Bulletin that at the end of the first year's oper-  
ation of the Air Corps Civil Flying Schools, Cal-Aero  
Academy stands No. 1. It has a percentage of 64.4%  
graduates of all the flying cadets who started their  
Primary training at this school and completed their  
Basic training at Randolph Field, Texas, as compared  
with a general average of 57% at all U. S. Air Corps  
Civil Flying Schools.

It is even more gratifying to us to have  
accomplished this percentage without injury to any  
flying cadets or personnel. This carries out the  
announced policy of this school, which is: "Safety,  
first; and Technical Perfection, second".

I now take pleasure in advising you that in  
order to give maximum assistance to the national  
defense program, and for the duration of the present  
emergency, Cal-Aero Academy will devote its entire  
efforts and modern airport-academy bases at Glendale,  
Ontario and Oxnard, California, exclusively to the  
training of flying cadets for the U. S. Army Air Corps.

Very truly yours,

*C. C. Moseley*  
C. C. MOSELEY,  
President,  
Cal-Aero Academy

CAL-AERO ACADEMY

# AMERICAN AVIATION

The Independent Voice of American Aeronautics

Published the 1st and 15th of each month

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AMERICAN AVIATION DIRECTORY: Published twice a year, spring and fall. Complete listing of aviation companies and organizations, including government agencies, and their officials and important personnel. \$3.00 single copy, \$5.00 per annual subscription. Bulk rates on request. Next issue Apr. 15, 1941.

## Fortnightly Review

(Continued from page 1)

despite the President's indecisive effort to iron out the confusion. National Defense Advisory Commission, which still dangles from OPM with uncertain status and indefinable duties and powers.

Council of Nations' Defense, comprising various cabinet officers, a group now playing a minor part but which still exists as part of the entire defense picture. It was this council that the Advisory Commission was originally formed "to advise."

Plus various War and Navy personnel on loan from their departments who are working in OPM and other groups.

Within the last six months, division has been piled on division, but no one, apparently, would ever think of abolishing one division once another superseded or duplicated it.

For some time both AMERICAN AVIATION and American Aviation Daily have been attempting to obtain or draw up an "organization chart" showing the entire defense set-up. Not only is such a chart non-existent, but there is no one who could even do a good guessing job as to what the responsibilities of the various defense units are, and which unit has the final responsibility. To use a single expressive word, it's a mess.

A straight-line set-up of responsibilities is critically needed. If a remedy is not found soon, the efforts of the aviation industry to do its best for national defense will be seriously crippled.

In the first place, the President's "reorganization" of the National Defense Advisory Commission by creating OPM has not solved the problem, as few in Washington believed it would. The Knudsen-Hillman combination was not destined to pay out in sound results because Knudsen was not given the clear-cut authority he should have.

In the second place, OPM is now faced with a duplicate effort toward aircraft procurement now being created in the War Department, as witness the appointment of Robert A. Lovett by Undersecretary of War Robert A. Patterson. Lovett is highly regarded in some quarters but OPM has its own aircraft production division with able Merrill C. Meigs as its head and with highly-rated T. P. Wright as an aide.

An aircraft plant today is likely to find the War Department, the Air Corps, OPM, the Navy Department, and the Treasury Department, to list a few units, all calling in the course of one day. The failure to centralize authority in OPM has, naturally, forced the Army and Navy to take the initiative to get their own problems solved, and in the background is the President and his staff who seem determined not to define clearly the

powers and responsibilities of any single agency, but to keep the final decision in the White House.

The procurement maze is, of course, partly responsible for the disappointing output of fighting airplanes. Production is behind the optimistic estimates of a year ago. There are some very good reasons why these estimates proved to be too high but the amazing confusion in Washington has not helped matters and will not help in the future. Efficiency in the industry cannot be at its highest as long as there is such a dispersion of authority in Washington as now exists.

## Definition

ADD to the library of poignant definitions of aviation the following by Gill Robb Wilson, president of the National Aeronautic Association: "The airport is the sales counter of air transportation."

And from the same source recently came the following expressive statement: "The light of civil air development must not be dimmed in the United States, for that light illuminates the pathway of national safety."

## Honesty in Advertising

A WELL-KNOWN advertising executive who is thoroughly conversant with air transportation, has called our attention to two recent transport advertisements containing erroneous statements. One of the advertisements was prepared for the Air Transport Association as part of its cooperative campaign in national publications. It contains the statement that "in 1940, . . . airliners will carry more than two and a half million men, women and children." The other ad was prepared by an airline and carries the statement that during 1941 the airlines "will carry 3,750,000 people."

We agree with the advertising executive that both ads are definitely misleading by talking in terms of people. Does anyone really know how many people traveled by air in 1940? The airlines have records of passengers only and in some cases one person is counted as five passengers on one trip. One can only estimate the number of individual buyers of air travel.

If the airlines were to transport 3,750,000 people in 12 months, this executive wrote us, how many planes would that require at 1941 load factors? "Suppose half of those persons averaged three trips—that's 5,625,000 passengers. If the other half averaged six trips that's 11,250,000 passengers or a total of 16,875,000 passengers. (What's your guess for average number of trips per person per year?) Pullmans carried 15,539,847 passengers in 1938. Therefore I think such advertised statements make it appear we are doing a many times better job than we are doing."

## Educational Opportunity

OPENING of the Washington National Airport sometime late this spring or early summer will be an important aviation event. The new airport will be one of the finest in the world and the terminal building itself will be without a rival. It will serve as a model for the nation. We hope the Civil Aeronautics Administration will plan something outstanding to mark the opening. An air meet would be appropriate. If traffic conditions make an out-door show impossible, then we suggest that every type of plane now current, civil and military, be brought to the capital for exhibition. There will be huge crowds visiting the airport at the time of the opening. What more worthwhile educational effort could be made than to let the visitors see at close range the many types of civil and military airplanes now being built. The CAA should be making plans now to provide a suitable opening for this great new airport.

### Airways Communication Map

Civil Aeronautics Administration has issued a 17 x 24" map showing Federal airways communication stations as of Jan. 15. Schedules "A" and "B" and Canadian longline circuits as well as point to point radio stations and radiotelephone broadcast points are indicated.

### 'Wings over Wichita'

First issue of "Wings over Wichita," local monthly publication boasting Wichita as the "air capital of America," made its appearance recently. H.

Ernest Kingsley is publisher, general manager and sole owner. Offices of the periodical are located in the Kaufman Bldg.

### New Air Chart Published

A new aeronautical planning chart of the U. S. designed for plotting long flights has been added to the air chart series published by the Coast and Geodetic Survey, according to Rear Adm. L. O. Colbert, director. Lithographed in nine colors, the 31x43" map shows more than 1,200 cities and 400 airports.



## Capital Notes

THAT U. S. AIR STRENGTH might be impaired by the lend-lease bill is a favorite argument of anti-interventionists—new name for the old isolationist block in Congress—and a probability carefully explored and honestly discarded by conscientious supporters of the British-aid program. It is doubtless safe to say that every American, whether in Congress, in the streets or on the farm, realizes the importance to national safety of a large, modern, fully-manned air force. The surprising phenomenon is that so few realize the woeful inadequacy of our airports.

With overwhelming support from home, members of Congress are eager to vote astronomical sums to equip the Army and Navy with fighting aircraft. And properly so. They are keenly interested in production lags and anxious to take whatever action will speed up and expedite the defense program. But so far, at least, they have failed to recognize the obvious and ominous fact that our weak airport system is the real bottleneck of our air defense, the greatest threat to our tremendous effort for a powerful and mobile air strength.

Last year Congress gave CAA \$40 millions to begin an airport development program, limited to only 250 air fields. The Budget Bureau now recommends the relatively paltry additional amount of \$33,500,000 to complete this initial expansion, although CAA estimates \$81 millions would be necessary to do a thorough job—on the 250. For further expansion, nothing is recommended. Airport appropriations are carried in the Commerce Department appropriation bill; in considering it, Congress has a grave responsibility.

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CAA INDEPENDENCE, as proposed by Senator McCarran in Senate bill No. 1, will not be approved by Congress. Hearings on the measure have been promised by Senator Bailey (D., N.C.), chairman of the Senate Commerce Committee where the bill is pending. But even in aviation circles which fought CAA reorganization so bitterly last year, interest has grown cold. Some Republicans and certain anti-administration Democrats are planning to put on a little show to revive the controversy, largely as a political issue. But nobody cares very much any more.

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AIR MAIL payments, appropriated in the annual Post Office supply bill, illustrate the continuing growth of airline operations, not only at home but in the service overseas. But because of the war our air transportation system faces a period not of curtailment but of limitation. The problem is one of policy which has never been clearly defined.

As the situation now stands, the Priorities Board is releasing sufficient equipment for replacements and for unexpected emergencies. Behind the scenes, however, a rather bitter argument is still raging. Chief point of disagreement is over the War Department's firm contention that production facilities must not be spared for new improved type transport planes, Douglas DC-4's and Lockheeds, which the airlines have on order. In this viewpoint aviation leaders see a threat to commercial development restricting the usefulness of the airlines as a defense auxiliary.

\*\*\*

EXPEDITING AIRCRAFT PRODUCTION has become the most popular of all national defense parlor games. At almost any dinner party there are always several guests who could tell the manufacturers a thing or two about improving their technique. Here are a few facts which might give these armchair experts a little information to go on, facts about what is now being done to speed up the program.

In the first place, they might consider that the manufacturers themselves are throwing the full weight of their scientific forces behind every practical suggestion for streamlining operations. And they are farming out more orders to increasing numbers of subcontractors; they are welcoming the service of the automobile companies under Mr. Knudsen's plan. They are working with the government to cut through red tape and accelerate procedure. In Washington, Merrill C. Meigs, head of the OPM aircraft division, is building up a staff of outstanding aeronautical technicians. Robert Lovett, special aide to Undersecretary of War Patterson, is struggling to untie the knots in procurement procedure. Donald Nelson is hopeful of standardizing contract forms and methods of purchasing.

Of course there are flaws, problems and delays. But let the sofa scientists review the record of last year's almost inconceivable expansion, or heed the statements of both industry and government officials who say our 37,000-plane program: "The job can be done."

## Obituary

CAPT. RICHARD S. FREEMAN, 33, commandant of Ladd Field, Alaska, died Feb. 6 in the crash of an Army Flying Fortress near Lovelock, Nev. Seven other Army men were killed in the crash. Capt. Freeman shared in the winning of the Mackay Trophy for 1940 for outstanding aircraft engineering on the 1939 flight of six Fortresses to Rio de Janeiro.

EDWARD A. GILLIS, 41, of Upper Montclair, N. J., an assistant treasurer of Curtiss-Wright Corp., New York City, died in an automobile accident Feb. 6 at Little Falls, N. J. Gillis, who was also controller of Curtiss Propeller Division of the corporation at Caldwell, N. J., was

en route from the Caldwell plant to his home.

BRIG. GEN. FREDERIC ERASTUS HUMPHREYS, 57, the first Army man to fly solo in a military airplane, died at Miami Beach, Fla., on Jan. 29 of a heart attack. His historic flight was made Oct. 26, 1909, after he had made several flights with Wilbur Wright. A member of the Institute of the Aeronautical Sciences, Gen. Humphreys during the World War was assigned to various Army aviation schools.

MATTHEW KERR, 42, a flying instructor for Safair Inc. at Roosevelt Field, N. Y., since 1926, died at Hicksville, N. Y., on Jan. 31. He was credited with 3,000 hours in the air.

JOHN C. YOUNG, assistant superintendent of air mail, New York City, died on Feb. 3.



"I decided to fly over the West on account of the Indians."

## Folks Worth Meeting—

AMERICAN AIRLINES' publicity tie-ups go on forever. The company's pilots wear such-and-such raincoats and smoke you-know-what cigarettes. Stewardesses prepare meals and mechanics overhaul engines in Sunday roto sections. There are color shots of Niagara Falls, LaGuardia Field, Lincoln Memorial and what-have-you, all taken from Flagships.



Bern

The man behind this promotional work is Edward G. Bern, the company's director of publicity, and it is much harder to get a story about him than about the product he sells—American Airlines.

Bern, who was born in Chicago and educated at St. Mary's College, Kansas, has been engaged in selling aviation to the U. S. public for 22 years. He came from a transportation-minded family, his father at one time serving as secretary-treasurer of the Chicago & Alton Railroad, and later as president of Candle Cattle Car Co., the largest cattle rail-car owners of the late 1890's.

Bern was president of Kansas City-Wichita Airways, one of the first airlines to be established, headed Bern's Flying Circus, which operated in both the U. S. and Mexico, and was president of Columbia Airlines, owner of a Detroit-Toledo-Dayton - Cincinnati - Louisville - Evansville-St. Louis route.

After selling Kansas City-Wichita Airways, his Flying Circus went to Mexico, Yucatan and Buenos Aires. He then contracted with the Laredo, Tex., Chamber of Commerce and conducted a good-will tour through 14 states.

As early as the '20s, while on this tour, Bern was stressing the safety of aviation. One of his advertisements said: "Just think, a safe non-stunting ride for \$1.50, using 1925 designed planes—not old war relics." Also: "Remember, we fly with you. We have just as much love for our families and wives as you have. Therefore you can send your children out. We'll watch them."

The advertising must have been effective, for in 1925 Bern's outfit carried the unbelievable total of 42,500 persons and traveled 70,000 miles.

For several years, Bern was with Mack Truck Co., first as salesman in Chicago, then as branch manager in the Twin Cities, then in the same position in Chicago, where yearly sales averaged over \$12,000,000. A small sample of his success is seen in the following note from Mack's house organ concerning his Twin Cities activities: "He sold 39 new trucks in the first six months of this year (1929). We never had to replevin any of his trucks. A good share of his sales were for cash."

For a time Bern was president of Middlewestern Transportation Co., which at one time was the largest trucking firm in the middle west.

In 1936, he joined American Airlines as publicity chief of the company's western division, with headquarters in Los Angeles. Two years later he was named director of publicity.

Under Bern, American's publicity department has gone in for pictures in a big way, and its file is now one of the most extensive, if not the most extensive, in the air transportation industry. In addition to the New York headquarters, several key offices throughout the system have complete picture files.

Bern's collection of color shots is something to behold, and it's a poor Sunday when at least one big-time newspaper doesn't have a Flagship picture or spread. If Bern doesn't have the picture you want, he'll get it.

He is a member of the Northwestern University chapter of Sigma Delta Chi, professional journalism fraternity. Bern is married and is the father of two children.

## Three Airlines Among Top 300 Magazine Advertisers

Three airlines are listed among the 300 U. S. companies spending over \$100,000 in magazine advertising during 1940, according to a compilation by Advertising Age. They are American Airlines Inc., which ranked 146th with a total of \$226,328; Pan American Airways System, 201st, \$157,465; and United Air Lines, 259th, \$121,445.

Air Transport Association of America, which placed cooperative advertising for the industry, ranked 149th with \$217,635.

MORE THAN

*A Million H.P.*

A MONTH



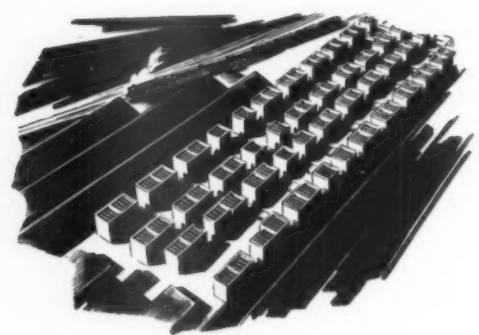
WRIGHT AIRCRAFT ENGINES TOTALING OVER 100,000 H.P. READY FOR SHIPMENT

## WRIGHT REACHES NEW PEAK OF POWER PRODUCTION...

WRIGHT enters February with a rate of aircraft engine production never before equalled in America... well over 1,000,000 H.P. per month... and increasing rapidly. Yet 1941 will see this figure more than doubled with the addition of the new Cincinnati Division for which an expedited program of tooling and training is now under way.

Wright has pioneered in power. Only because of long years of experience in engineering and building aircraft engines has this vastly increased production been possible, and it has been effected without any compromise whatever in quality. Now a comprehensive training program is enabling thousands of new men to acquire the skill to meet aviation standards. Each day that passes sees the national position more secure with additional tens of thousands of horsepower for defense.

**WRIGHT AERONAUTICAL CORPORATION**  
A Division of Curtiss-Wright Corporation Paterson, New Jersey



*More than 75,000 horsepower is constantly on test day and night in the long batteries of soundproofed cells.*

**WRIGHT**  
*Aircraft* **ENGINES**



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## Lees' Log

WALTER LEES, who was co-pilot on the non-refueling duration record made many years ago in a Packard Diesel-powered Bellanca from Daytona Beach, has kept a log of all his flying on the airlines since Jan. 1935 to date. Lees is now sales engineer of Scintilla Magneto Division of Bendix Aviation Corp. at Sidney, N. Y. His log reveals the following: He has flown a total of 66,000 miles, having made 206 separate flights with an average of approximately 325 miles per flight. He has flown on 13 different airlines: American, Braniff, Chicago & Southern, Continental, Delta, Eastern, Inland, Mid-Continent, Northwest, Pan American, Pennsylvania-Central, TWA and United. He has flown the most number of times (82 out of the 206) on American since he does considerable traveling between Chicago and Detroit.

The flights were taken in 11 different types of aircraft, including the Boeing 247-D and Boeing Stratoliner, Douglas DC-2 and DC-3, the Ford Tri-motor, Lockheed 10-A, Lockheed 14, Lockheed Lodestar, Lockheed Vega, Lockheed Orion, Stinson A and Stinson T. Lees flew with 134 pilots, not including five times with Capt. Tom Claude of American; also with 158 co-pilots, not counting four times with First Officer Schweizer of American, and 107 times with stewardesses and hostesses, not including five times with Miss McAssy of American.

## Air Cargo

(Continued from page 15)

industries, should be modeled on our best existing heavy-hauling landplane and our most suitable long-range flying boat.

For the same amount to be spent on the 200 marine cargo vessels, \$350,000,000, we should be able to build 5,000 transports, and in half the time. After this lot of sky trucks had been ordered, the designs could be "frozen" until a year or two hence when an accumulation of "project slips," or changes, could be applied to the next batch of transports.

### Foreign Commerce Speeded

SKY TRUCKS are needed to speed up commerce with other parts of the world, too. We have no highways nor railroads to Alaska or South America. Our only present means of carrying goods (other than the limited express facilities of Pan American Airways and American Export Airlines) is to or from the borders of the U. S. is by sea-going vessel. It takes the better part of a month for a shipment from this country to reach Buenos Aires. A freightplane would make three or four round trips in that length of time.

It's no secret that renewed Japanese aggression southward to the Malay Peninsula and the Dutch East Indies would hamper the flow of many of our vital raw materials. With the current tempo of industrial activity, some of our stockpiles might be critically low and we would find ourselves dependent on sources in our own hemisphere. Even then our position in respect to some essential materials would be by no means pretty.

Rubber is a case in point, for it now comes to us almost exclusively from British Malaya and the Dutch East Indies. Three years would be required to build sufficient synthetic rubber manufacturing capacity merely to supply enough substitute for all the tires produced in this country, let alone gas masks and other military uses. The limited amounts with which Brazil could supply us would be hungrily sought after.

Of the five basic materials used in aircraft construction, aluminum, copper, rubber, magnesium and steel, three (the first three) come into this country from abroad in quantity. Of six metals essential for aircraft steel alloys, manganese, chromium, nickel, vanadium, tung-

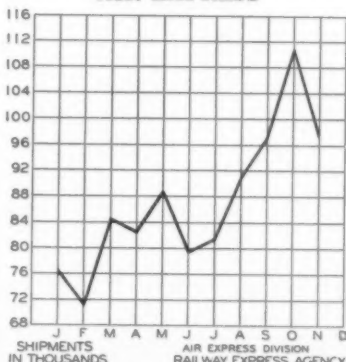
sten and molybdenum, all but the last-mentioned are considered "strategic" or "critical" by the Army and Navy Munitions Board, and must be imported entirely or in part from foreign soil. In the case of our "No. 1 strategic material," manganese, we produce only seven per cent of our annual requirement.

### Sky Truck Auxiliary

South and Central America, Mexico, Alaska and Canada supply, or can be made to supply, most of the essential materials for defense. But those countries do not have the means of shipping them to us, and, if disaster overtakes the British, we may not have sufficient marine vessels, even with all those on order, left to bring them in quickly enough. Our sky truck auxiliary could not hope to haul the same quantity of cargo as our merchant marine. But if, as invariably happens under the strain of wartime production, our rearmament efforts bogged down for want of certain raw materials, for instance, Chilean nitrates, Cuban chromium, Bolivian tin, Peruvian vanadium or Brazilian manganese, those 10 times faster sky trucks would be a lot more useful.

To insure emergency transport facilities and, just as important, to create prestige and good will among foreign peoples whose friendship we wish, especially the Latin Americans, who are closer by virtue of race, creed and perhaps even political doctrine to dictator-led nations than to us, we have need of a vast air freight system that can operate regularly and efficiently to every part of the Western Hemisphere.

### AIR EXPRESS



Oct. 1940—Shipments, 110,877, up 35.6% over Oct. '39; gross revenue up 34.6%.

Nov. 1940—Shipments, 97,362, up 26% over Nov. '39; gross revenue up 41.22%.

## To the Pilot...

Barometric Altitude... 9300  
Terrain Clearance... 1300

Barometric Altitude... 9300  
Terrain Clearance... 1300

The most important distance in the world!



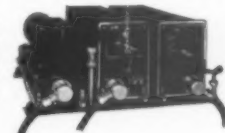
Check it instantly... accurately... with the

## ABSOLUTE ALTIMETER

Day and night, clear and stormy, the Western Electric Radio Altimeter gives you continuous, instantaneous, accurate readings of your terrain clearance. It's not affected by atmospheric pressure, temperature, humidity, cloud layers or static.

With the Radio Altimeter, altitude becomes height-above-the-ground... that vital distance between your plane and the terrain beneath. Now at a glance you can get this invaluable, definite information you always wanted and needed! Get full details about the Absolute Altimeter. Write Western Electric Co., Dept. 9640AD, Kearny, N. J.

Transmitter sends out radio wave which is reflected back from earth to receiver. Elapsed time for "roundtrip" is converted into absolute altitude—instantly shown on panel meter.



C. A. A. Type Certificates have been granted on the 1B Radio Altimeter apparatus elements.

## Western Electric

Northern Electric in Canada

### AVIATION RADIO TELEPHONE

## Western Air Express Becomes International Air Carrier

Sometime in February, Western Air Express, the nation's oldest airline, will join the select company of international air carriers by extending its route from Great Falls, Montana to Lethbridge, Alberta. Although this extension is only 195 miles in length, it is one of the most important airline additions to be made in several years, involving as it does, three separate and distinct factors of development.

**1. NATIONAL DEFENSE.** The Lethbridge extension closes the final gap in a vitally important inland airway to our rapidly expanding air bases in Alaska. Already open to commercial air travel on a bi-weekly basis, the Canadian section of this airway will soon be equipped with the very latest in modern lighting and other flight aids, according to recent reports. The new airway will also greatly facilitate the delivery of military planes to Canada and Great Britain.

**2. COMMERCIAL TRANSPORT.** Through connections with Trans-Canada Air Lines, Western Air Express opens a new line of communication with the vast territory of western Canada, from the United States border to the Arctic Ocean. Traffic experts predict an immediate expansion of profitable trade between the two countries.

**3. TOURIST TRAVEL.** Already known as the "National Parks Skyway," Western Air now adds the spectacular Canadian Rockies to the many scenic areas which it serves. Banff, Lake Louise, Jasper National Park, Columbia Icefield—a land which seasoned travelers say is "a dozen Switzerlands rolled into one"—are now but a few hours delightful air journey from any point in the United States. Coupled with the already well-known attractions of Yellowstone and Glacier Parks, Western Air becomes the nation's No. 1 vacation attraction for 1941.

## American Aviation for February 15, 1941

### Transcontinental Cargo Routes Proposed by American Air Freight

Great Lakes-Gulf Line Also Studied by California Company;  
Extensive Studies to Precede CAB Application

American Air Freight Corp., which has been formed by a group of prominent west coast businessmen, notified the Civil Aeronautics Board on Jan. 25 that, following completion of extensive studies, it intends to file applications for certificates to engage in air transportation of freight over three transcontinental routes and one line from the Great Lakes to the Gulf of Mexico.

The routes which will be sought are as follows:

1. Los Angeles to Boston via San Diego, Phoenix, El Paso, Ft. Worth, Dallas, Shreveport, Memphis, Nashville, Louisville, Cincinnati, Charleston, Washington, Baltimore, Philadelphia and New York.

2. Los Angeles to Boston via Albuquerque, Amarillo, Oklahoma City, Tulsa, Kansas City, St. Louis, Indianapolis, Dayton, Columbus, Pittsburgh, Baltimore, Wilmington, Philadelphia and New York.

3. San Francisco to Boston via Salt Lake City, Denver, Omaha, Des Moines, Moline, Chicago, South Bend, Battle Creek, Detroit, Cleveland, Buffalo, Rochester, Syracuse and New York.

4. Laredo, Tex., to Minneapolis via Corpus Christi, San Antonio, Houston, Ft. Worth, Dallas, Oklahoma City, Wichita, Kansas City, Des Moines, Moline, Chicago and Milwaukee.

The applications will be the first of their kind ever filed with the Board.

#### Study Comes First

It is learned that the company has no intention of commencing immediate operations or of filing an immediate application. AAF's first undertaking will be an extensive survey and study of the entire air freight picture. The company plans to study, among other things, ground distribution facilities, development of suitable aircraft, the most desirable routes, and the feasibility of making use of some of the facilities of existing airlines.

According to an AAF spokesman in Washington, probably the biggest problem will be the development of an air cargo plane, because of the fact that military construction will receive priority for an indefinite period.

"However, when the present emergency is over, the entire productive and engineering capacity of these manufacturers will be available for the design and production

of cargo-carrying aircraft," according to the spokesman. "In the meantime, the company will devote its efforts to laying the groundwork for an economical and efficient air freight transportation system."

It was pointed out by those connected with the new company that the only property now carried by the airlines is under an agreement with Railway Express Agency. "The purpose of American Air Freight Corp. is to explore the possibilities of extending this type of air service to a much broader field at considerably lower rates and independent of any connection with the railroads," it was said.

#### Headed By Gilmore

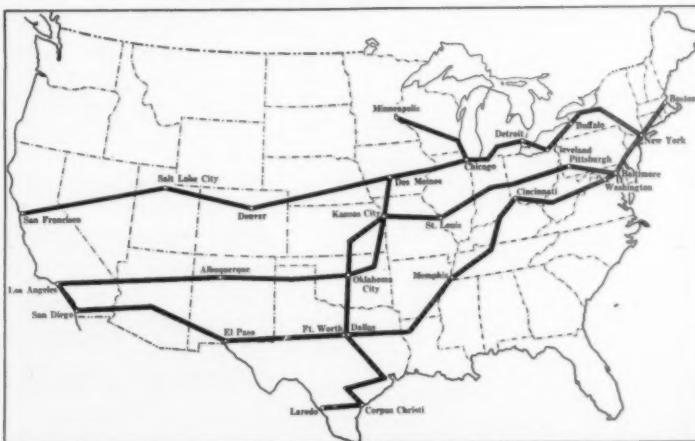
AAF is a California corporation, formed by a group of businessmen headed by Earl B. Gilmore, president of Gilmore Oil Co., former sponsor of Col. Roscoe Turner, and said to be the present sponsor of numerous aviation and automobile activities. Gilmore is a director of the company.

Thomas W. Simmons, president of Bolsa Checa Oil Corp., is president. Edward K. Mills Jr., who was formerly associated with the CAB as attorney connected with economic regulation, is a director and vice-president, and will supervise the company's eastern activities. George Young and Louis Thompson Jr. are directors, and Lester R. Daniels Jr. is secretary. The firm of Overton, Lyman & Plumb, Los Angeles, and Roger J. Whiteford and Hubert Schneider of Washington are attorneys for the company.

#### Lufthansa 1940 Traffic

Planes of Deutsche Lufthansa, German air service, flew 3,231,000 miles and carried more than 95,000 passengers during 1940, according to official Berlin news release. Passenger miles of nearly 35,000,000 equaled that of 1935, although the air routes serviced in that year were two and a half times longer than in 1940. Lufthansa carried over 900 tons of freight, 20% more than in 1939, and 40 tons of baggage, an increase of 50% over previous year. Air mail carried, however, dropped to some 1,000 tons, a substantial decrease from previous years caused by limitation of night flying, it is reported.

#### Proposed Air Freight Network



Map shows the four air freight routes for which American Air Freight Corp. intends to file applications with the Civil Aeronautics Board.

## C & S Wants Base Mail Rate of 44c a Mile for System

System base mail rate of 44c per airplane mile flown is asked by Chicago & Southern Air Lines in petition to CAB describing rate of 32c on AM-8 Chicago-New Orleans, as "unfair and unreasonable." From July 1 to Dec. 31, 1940, losses totaling \$51,014 have been accrued on AM-8 despite the receipt of greater passenger and express revenues than during any like period the company explained.

For AM-8, base rate of 44c per airplane mile is asked for the first 100 pounds of mail, plus 2.5% of such rate for each additional 25 pounds or fraction thereof . . . "to be applied to the actual mileage flown between points served on each trip without reference to any base mileage for the route."

On AM-53, new Houston-Memphis route over which company plans to inaugurate service Mar. 1, the same rate is asked with, however, the 44c applicable to the first 100 pounds of mail.

If the new rates are applied on all airport-to-airport basis and if the Postmaster General fails to designate trips for carriage of mail, then payments should be increased by amount sufficient to produce aggregate revenue at least as great as that which would be produced by the requested rate applied to actual mileage flown on all trips, the CAB was advised.

Service to Shreveport, La., on AM-53 will be restricted until airport improvements are completed about Apr. 1. C & S explained, adding that operations to Pine Bluff, Ark., the new route's other intermediate point, will not be possible for an indefinite time. Pine Bluff officials have informed the carrier that the city's new airport has been reserved exclusively for training Army pilots, but that the city "plans to improve the old airport (Toney Field) to extent required to enable petitioners to provide service."

C & S requested that its petition be consolidated for hearing with the investigation of rates initiated by CAB Dec. 1, 1939, and that the new rate for AM-8 be made effective from that date.



## America's Fastest Serves

Colorado, New Mexico,  
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To Wichita, Pueblo, Denver, Albuquerque, El Paso and other industrial centers of the West and Southwest, "America's Fastest" cuts travel time by hours and days. Now, more than ever, it pays to Fly Continental.

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AIR LINES**



## PCA Gets Pittsburgh-Birmingham; Delta Granted Cincinnati-Atlanta

CAB Refuses Dixie's Application; Delta Also Awarded Augusta-Savannah; Eastern Gets Two Stops

Reversing the proposed report of its examiners, and at the same time announcing an important new policy, the CAB on Jan. 31 awarded Pennsylvania-Central Airlines a route between Pittsburgh and Birmingham via Wheeling, Charleston, Knoxville and Chattanooga, and granted Delta Air Corp. a Cincinnati-Lexington-Knoxville-Atlanta service.

The Board also: (1) extended Delta's AM24 from Augusta to Savannah, (2) granted Eastern Air Lines permission to stop certain trips at Birmingham on AM5, New York-New Orleans, (3) granted Eastern a stop at Brunswick, Ga., on AM6, New York-Miami.

It denied (1) Dixie Airlines a route from Pittsburgh to Atlanta and Birmingham, (2) denied Delta Cincinnati-New Orleans and Savannah-Brunswick, (3) denied PCA Cincinnati-Knoxville and Knoxville-Atlanta-Savannah-Brunswick, (4) denied EAL a stop at Savannah on AM10, Chicago-Jacksonville, and (5) found Southern Airlines not fit, willing or able to operate.

The examiners had originally recommended that Dixie, a new company, be granted Pittsburgh-Birmingham, and that Delta be denied Atlanta-Cincinnati. They also had advised against a Birmingham stop for EAL.

### New Policy Adopted

A policy has been adopted, the CAB said, permitting an announcement of decision in pending proceedings in advance of the issuance of its opinion thereon "in exceptional cases where some paramount reason requires the decision to be made public at the earliest possible moment." The full decision of the Board did not become available until Feb. 8. The Board indicated that one reason for the new policy was to help the Priorities Committee of the National Defense Commission solve equipment problems.

In reversing the examiners and selecting PCA over Dixie to operate Pittsburgh-Birmingham, the CAB said that PCA has pioneered the portion of the route between Pittsburgh and Charleston.

"It has the personnel and organization available to inaugurate operations on the new route at a minimum of expense and loss of time," the CAB continued. "While we are not convinced that the inauguration of a route of the size here involved would result in any reduction of the per-mile operating cost of Pennsylvania-Central, it is our opinion that the per-mile cost of operating the route would be greater if conducted by a new carrier." The route would form an integral part of PCA's system, it added.

### No Monopoly Trend

The Board said it recognized "the fact that the considerations which lead us to this determination would be equally applicable in any case in which an existing air carrier is competing with a company without operating experience for a new route or service. The number of air carriers now operating appears sufficient to insure against monopoly in respect to the average new route case, and we believe that the present domestic air transportation system can by proper supervision be integrated and expanded in a manner that will in general afford the competition necessary for the development of that system in the manner contemplated by the Act.

"In the absence of particular circumstances presenting an affirmative reason for a new carrier there appears to be no inherent desirability of increasing the present number of carriers merely for the purpose of numerically enlarging the industry. In the instant case, there is no indication that the operation of this route by Pennsylvania-Central constitutes a monopolis-

### PCA Line to Open Feb. 25

Pennsylvania-Central Airlines will inaugurate service over its new Pittsburgh-Birmingham route on Feb. 25, according to company announcement. Only cargo will be carried until Mar. 6, when passenger service will open. Until Apr. 1, Boeing 247-D equipment will be used and one round trip daily will be made. On that date, DC-3's will be put into service, and schedules increased to two daily. The route makes PCA the fourth largest domestic airline from the standpoint of cities served. The company will be serving 32 cities, 12 states and flying over 3,331 route-miles daily.

tic condition contrary to the public interest, nor is there any evidence of record as to any unusual factors which make it appear desirable to add a new operator to those presently authorized to engage in air transportation."

In selecting Delta to operate Atlanta-Cincinnati, the Board said the route could be operated "as an integral part of Delta's system, providing a direct through operation for the substantial volume of traffic between Cincinnati and points served by it." The service will save about 75 miles and \$8.50 in fare on a one-way trip between Atlanta and Cincinnati, it noted.

### Georgia Cities Linked

Augusta-Savannah, operated by Delta, "would establish direct service between the two largest cities in Georgia, one of which is the capital (Atlanta), and the other is the leading seaport of the state," the CAB said. The route would save 134 miles and \$6.25 fare over present service via Charleston. Brunswick was awarded Eastern because the company now flies over the city and could serve it with little additional cost.

Southern Airlines is not fit, willing or able to operate the routes asked for it, the decision said. "A review of the evidence . . . forces us to conclude that this applicant has no realization of the risks involved in an undertaking of the type proposed by it."

In awarding EAL a Birmingham stop, the CAB ruled that only flights on AM5 originating and terminating in New Orleans or south thereof, and in Washington or points north thereof, may stop there. Local Atlanta-Birmingham traffic is adequately served by Delta, it explained.

CAB Member Edward P. Warner and George Baker disagreed with the majority on the Atlanta-Cincinnati and Pittsburgh-Birmingham awards.

### New PCA Officials



Newly named officials of Pennsylvania-Central Airlines are Gaston E. Marque, left, former aviation editor of the "Wall Street Journal" who will function in a public relations capacity, and J. A. McAvoy, right, auditor for the company, who has been named assistant treasurer. McAvoy will work under R. G. Lochiel, treasurer, in Pittsburgh. He joined PCA as a junior accountant in 1935, and pioneered a new cost analysis system recently adopted by the company.

## New York-San Juan Sought by Pan Am

Stressing the importance of Puerto Rico in national defense plans, Pan American Airways Co. on Feb. 1 filed application for transportation of persons, property and mail along a 1,610-mile route between New York City and San Juan, P. R., with authority to use Baltimore, Md., as a co-terminal in the U. S. Total elapsed time on the proposed operation, the application stated would be 11 hours as compared with 17 hours southbound and 19 northbound on the speediest schedules now existing between New York and San Juan, utilizing services of Eastern Air Lines between New York and Miami and of Pan American Airways Inc. between Miami and San Juan.

Connections will be established at San Juan with the system of routes operated by Pan Am to cities along the eastern coast of South America. It is pointed out. Company intends to operate the proposed route with Boeing 314 equipment of which it now has three, with three additional expected to be available by June 1941. For first year of operation with thrice weekly schedules, company estimates net loss of \$525,700, before U. S. mail pay.

## Mentzer Heads United's Engineering Department

W. G. Mentzer, chief engineer of United Air Lines, has been given full charge of the company's engineering department, according to J. A. Herlihy, executive vice-president in charge of operations.

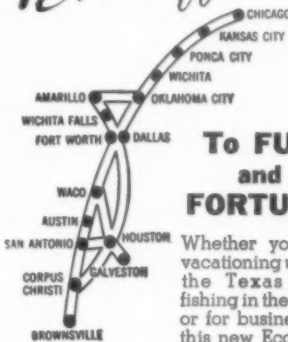
Mentzer, who started as an apprentice mechanic for United, will have full supervision over all four groups of the company's engineering department, including research, design, maintenance and overhaul, and will have approximately 50 engineers working under his direction.



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## South America's East Coast Vitrally Important From Aviation Viewpoint

But 11-12c Air Fare, Compared to 5c in the U. S., Is Barrier to Heavy Plane Traffic; 'What Day,' not 'What Hour,' Is the Passenger's Question

By W. W. P.

This is the fourth of a series of articles on an air tour of South and Central America.

**R**ESUMING where this series left off in the Jan. 1 issue, there is no doubt that the most important area of South America as far as the U. S. is concerned, is the east coast section from Rio de Janeiro, Brazil, to Buenos Aires, Argentina. Here are the two largest cities of South America, close together on a map but actually as far apart as New York and Kansas City.

These two large and important capitals are potentially great aviation centers. Rio has far outstripped Buenos Aires so far as aviation is concerned, although B. A. is considerably larger and is, as a matter of fact, the third largest city in the western hemisphere. Rio is cosmopolitan, the new Paris of the world. B. A. is just a large bustling city with subways, many theaters, considerable night life, and miles of clean modern shops.

At Rio's doorstep is its beautiful Santos Dumont Airport with a fine seaplane terminal, a very large hangar, the Pan American Airways base, and plans for several other hangars and a very large landplane passenger terminal. Buenos Aires lags far behind on airports. Its municipal field is just a field, rough in spots, no runways, a modest terminal building that even Miles City, Mont., wouldn't want to have, and a number of ugly hangars of no great size. Furthermore the Buenos airport is far out of town, about 15 miles or so.

From an aviation standpoint, therefore, Rio has far more to offer. Brazil is giving increasing governmental attention to affairs of the air and today Rio serves as an international crossroads with Pan American, the Italians, the German Condor line, Vasp and a few others serving its one fine airport.

The first impression one gets in this part of South America, however, is frequency of schedules. Down there it isn't "What time does the next plane depart?" but, "What day does the next plane go?" For all of the great front we put on up here about our own international services, the fact remains that the sum total of our accomplishments during the last 10 years is a handful of schedules a week.

For example, Pan American Airways flies only three round-trips per week between Rio and Buenos Aires. That means a maximum of 60 passengers each way per week—60 persons per week between two of the largest cities of the western hemisphere and with fares about 11¢ to 12¢ per mile. With one plane on each of three days, Monday, Wednesday and Saturday, an air trip to Buenos Aires from Rio is truly an occasion and, needless to say, the planes are invariably filled with a waiting list. Space is not easy to get unless you are a through international passenger.

There is an entirely different air traffic psychology in South America to what one is used to in the U. S. Up here the traffic departments of the airlines are breaking their necks to fill up all schedules so that more schedules can be added, and every time

## Brazilian Aviation Expands



At the last International Sample Fair of Rio de Janeiro, which closed Dec. 11, the displays included the above on civil aviation, prepared by the press and propaganda department of the Brazilian government. Prominent is the four-engine Boeing Strato-Clipper used by Pan American Airways. During 10 years Brazil built 512 airports.

a new schedule is added between important points it is an occasion for newspaper advertisements and much cheering. And if one line can add another schedule between New York and Chicago, for example, this is taken as a notable achievement justified by an increase in traffic.

Not so in South America. In the first place the fares are much too high to attract the "average traveler." It's a de luxe way to travel, if you travel on PAA, and you are given U. S. standards with U. S. transports (Douglas DC-3), a steward, tomato juice, and a crew of four. But you have to have money to travel by PAA, because 10-12¢ a mile, and even more on some trips, is no small sum despite the time saved en route.

**O**NE DOESN'T "go after" air traffic in South America, that is, it hasn't been done in the past. (Panagra on the west coast is starting in to promote traffic but this is a new development). The air traffic potential exists, especially on the east coast, and so I am sure we will see not a few a week but many planes a day and with fares that are comparable with those in the U. S.

There is no railroad between Rio and Buenos Aires. Since Air France suspended service at the start of the war, there are only two airplanes operating, PAA and Condor, the German line. The only other means of transportation is by boat and this is a three-day voyage with accommodations, at present during the war, none too good except on the infrequent U. S. boats. The air trip can be made very nicely in a day, as a matter of fact, less than a day. The plane leaves at 8 a.m. and arrives in Buenos Aires at 2:45 p.m., less than seven hours. The fare is \$135 one-way, or between 11 and 12¢ per mile.

Only two planes a week fly direct between the two capitals with a refueling stop at Porto Alegre. The third schedule goes by way of Ascuncion, capital of Paraguay. The direct schedules go straight down the coast and flying conditions, as a rule, are excellent. There are no mountains or rugged terrain to bother about except near Rio.

The day I left Rio, we flew high, going along at 15,000 feet for quite a period to keep above the overcast. The pilot told me he had never flown that high on this run and I imagine it is unusual to fly higher than 10,000 or 12,000 feet. The overcast on that day, however, was really something, for when we came down over Porto Alegre I was somewhat astonished to find that we had about a 1,000 foot ceiling which meant about 14,000 feet of solid clouds. It was pouring rain as only it can rain in South America near the tropics and we landed on paved runways, the only paved runways I saw in South America. The field belongs to Air France and I learned that PAA's field, which it can't use in the rainy season, was under water. If it were not for the Air France field,

there wouldn't have been a stop at Porto Alegre that day. The entire countryside was drenched.

The Rio-B. A. run is a fine DC-3 operation. With one stop for gas, it should develop, if PAA wants to carry the traffic, into one of the best routes in the western hemisphere. I can see the time coming when, with night flying aids, it will be a nice hop in the late afternoon with arrival in B. A. about midnight which is just about when the people of B. A. start going to shows and having dinner.

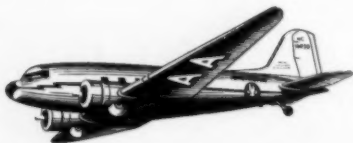
Why this route has not been developed more rapidly than it has is a question for PAA. It was interesting to note that many of the personnel on PAA can't grasp the fact that American Airlines, in this country, has carried over 100,000 passengers in a single month. Even with a 100% load factor, PAA can carry about 3,120 persons per year one-way between Rio and Buenos Aires.

Just what business Condor does is not easy to find out, but Condor's business was reported to be pretty good. Condor had two of the four-engine 24-passenger Focke-Wulf planes (very unstable at landing and take-off), the commercial equivalent of the F-200 bomber now in use in Europe. Condor also had quite an assortment of Junkers and smaller Focke-Wulfs. Fares were lower than PAA's by a reasonable margin, but I got the definite impression that passengers would much rather ride on PAA because of the better equipment and higher safety standards.

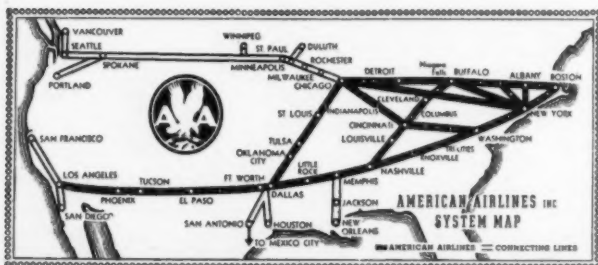
**T**HE ONLY real sign of air transportation as we know it in the U. S., i.e., planes coming and going all day long, was in Rio with Vasp, an airline now owned by the State of Sao Paulo and using German-made Junkers transports. Since I left Rio, Vasp had a bad fatal accident which, I understand, hurt business substantially. But Vasp was operating three round-trips a day between Rio and Sao Paulo (Brazil's coffee and industrial center) and business was very good. I watched with interest the loading and unloading of passengers and, so far as I could see, all planes were filled. It is perhaps noteworthy that Vasp charged half the fare of Panair do Brasil, PAA's Brazilian subsidiary, and Panair operated, I believe, four times a week to Sao Paulo with Lockheed Electras.

Pan American's Rio Base is the maintenance base for both PAA's international service and for Panair do Brasil. The following planes are overhauled there: two DC-2's, two Lockheed Electras, two Sikorsky S-43's, two Fairchild amphibians, and four DC-3's of the international service. Two Commodore which have been in service for over 10 years, were recently sold to the Brazilian Army.

One thing struck me as a particular barrier to communications between North and South America, quite apart from the high fares. That is the mail rate. It costs 40¢ to send a one-half ounce letter from the U. S. to Rio.



**N**O ONE is so rich in time that he can afford to waste it... Nor is any traveler so full of energy that fatigue fails to curb his efficiency... Go by air and Go American!



**AMERICAN AIRLINES Inc.**  
ROUTE OF THE FLAGSHIPS



## Planes Aloft

Eastern Air Lines had 30 of its 40-odd transports in the air with total of 532 passengers at 3 p.m., Jan. 5, a mark which company believes is a record of some sort. Northbound from Miami to New York 13 planes were carrying 247 passengers, while seven craft flew in opposite direction with 112. Ten planes on other routes were aloft with 193 passengers.

but it cost 70c for that same half-ounce letter from Rio to the U. S. Of course there is a five-gram rate of 25c, U. S. money, but that is a postcard rate. If the U. S. desires to foster good will and communication in South America, the letter rate must be cut sharply. Seventy cents for a half-ounce letter by air from Rio is as obsolete as it is short-sighted. That is one of the many reasons why South America is far more distant from the U. S. than mere mileage, for the mileage isn't as insurmountable as it was 10 years ago.

In closing this article, I would like to dwell on the idyllic living which some of the Pan American pilots enjoy in Rio. After being there a few days I could well understand why PAA's pilots preferred to be based in Rio. It is understandable that wives often do not like to be so far away from the U. S. and they don't like to learn a foreign language. But if you can sacrifice certain comforts and conveniences of the good old U. S. A., there are a lot worse places than Rio to live.

Just for purposes of illustration, take our friend Capt. James Walker, who flies north from Rio. A rather handsome chap himself, he has a beautiful wife and an apartment high up over Copacabana Beach with one of the most beautiful views the world has to offer. He has a Capehart for music, good food, and a beach at his doorstep.

Not satisfied with just the luxury of living, he has taken to collecting Bugle birds for his wife. If I forgot to say she was charming, I mean to bring that in, plus the fact that she is a wonderful hostess. But to get back to the Bugle birds, he had three when I was there and named them PiraPora, Heddy and Tercera. PiraPora is a small town 400 miles north of Rio and if you ever have to stay overnight, I can assure you an intimate glimpse of life in interior Brazil. Bugle birds are almost human and very tame. They are excellent at doing tricks. It must be nice to be a PAA pilot and live in an ultra-smart apartment overlooking the beach in the world's loveliest city.

## 2,520-Mile Twin Cities-Alaska Line Sought by Northwest Airlines

A 2,520-mile mail-passenger-property route from Minneapolis to Fairbanks, Alaska, via Fargo, with four fueling stops in Canada was sought Feb. 3 by Northwest Airlines in an application filed with the CAB.

The route, which would be operated twice-weekly with DC-3 equipment now owned by the company, would have fueling stops at Regina, Edmonton, Grand Prairie and Whitehorse, all in Canadian territory. Passengers would not be transported to and from those points.

Award of the route to NWA would involve expenditure of approximately \$1,000,000 by the company for aids and equipment, it is said. The application stated that at Grand Prairie, Ft. Nelson, Watson Lake and Wolf Lake the company would install 3 kw. broadcast transmitters emitting CW signals, "non-directional, low frequency for purposes of homing and cross bearings, using automatic direction finders in the airplanes."

At no point except in the vicinity of Whitehorse, would it be necessary to fly higher than 7,000-8,000 ft. in order to insure ample clearance of all terrain and all peaks within 50 miles of the course, the application said.

For the first five years, assuming twice-weekly operation, NWA would show the following losses (without mail pay): \$542,623 (114.80c per revenue mile), \$523,510 (110.75c), \$503,809 (106.59c), \$483,484 (102.29c) and \$462,472 (97.84c), respectively. During these years, average passenger loads would be 6, 6.6, 7.2, 7.8 and 8.4, respectively, while passenger revenues would total \$226,886, \$249,575, \$272,264, \$294,952 and \$317,641.

Trips would leave Minneapolis on Tuesdays and Fridays at 12:30 a.m., CST, arriving Fairbanks at 3:25 p.m., Alaskan time. Return flights would leave Fairbanks at 8 a.m. Wednesdays and Saturdays, arriving Minneapolis at 2:35 a.m.

Pan American's subsidiary, Pacific Alaska Airways now operates Seattle-Juneau, with connections for Fairbanks, which involves a one-day lay-over at Juneau, the application noted. The proposed route, it added, might take some business from PAA, but only passengers originating east of the Rocky Mountains.

"Applicant contemplates increasing its authorized common stock and marketing the same to the public upon customary terms through underwriters located at Chicago or New York or both, and located in the territory served by its present routes," the application stated. "It does not anticipate difficulty in raising the necessary funds at a reasonable cost."

Northwest "believes that the cost to

the government for the transporting of the mail in order to enable the proposed operation to be financially successful would not be excessive when the greatly increased public service is given consideration. At the present time there is no service offered by any other air transport operator or combination of operators which adequately serves the needs of commerce, the postal service and the national defense between the Territory of Alaska and points in the U. S. east of the Rocky Mountains. The operation proposed would speed up the air service now offered between Alaska and the U. S. and shorten the mileage. It would open up a new route . . . which would be particularly valuable in the national defense."

## Insurance Restriction Lifted

Limitation on life insurance coverage for "fare-paying passengers using licensed commercial airlines . . . over established air routes within the continental U. S." has been removed by the John Hancock Mutual Life Insurance Co., Guy W. Cox, president, has announced: "In recognition of demonstrated safety, the company will not impose any restrictions as to the frequency of flights or as to amount of life insurance in policies to be issued."

## Summer Air Service Planned

Summer air service between New Bedford, Martha's Vineyard and Nantucket, Mass., is planned for inauguration early in June and extending through October by Cape Cod Airlines Inc., according to Henry T. Olden, president. Company will operate a thirteen-passenger, twin-engine amphibian now being used for charter flights out of Miami.

## This is the Purpose of PARKS Air College



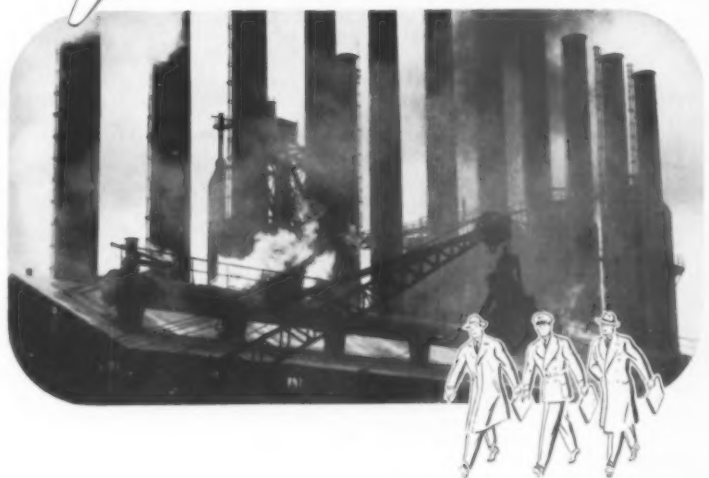
"To provide training so thorough for careers in commercial aviation, to maintain performance standards so high and, at the same time, to emphasize the development of integrity, complete dependability and all-round good citizenship to such an extent that the aviation industry will in the future, as in the past, wholeheartedly welcome all our graduates, is the purpose of Parks Air College."

If you are interested in adding men to your personnel who are equipped to make definite contributions to the progress of aviation, a letter to Oliver L. Parks, President, will bring you the names of available graduates of Parks.

**PARKS AIR COLLEGE, Inc.**  
East St. Louis, Illinois



## Across the Nation... SPEED IS THE NEED!



Over the shortest, fastest, coast-to-coast air route, TWA's great fleet speeds the business of preparedness. Whether you cross the continent or a single state, TWA—with its famous "Commuter Service" and the nation's fastest transcontinental flights—is ready to serve you. It's only a matter of minutes from inland industrial centers to seaboard cities—only overnight from coast to coast—when you fly the Route of the Stratoliners.

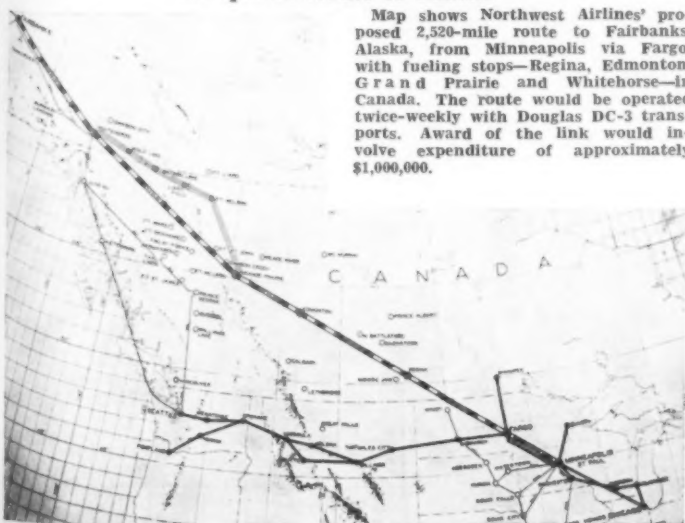


Information, Reservations: Your Travel Agent or TWA Representatives Everywhere

**ROUTE OF THE STRATOLINERS**

## Proposed Route to Alaska

Map shows Northwest Airlines' proposed 2,520-mile route to Fairbanks, Alaska, from Minneapolis via Fargo, with fueling stops—Regina, Edmonton, Grand Prairie and Whitehorse—in Canada. The route would be operated twice-weekly with Douglas DC-3 transports. Award of the link would involve expenditure of approximately \$1,000,000.



# AIR CARRIER RECORD

(C. A. B. Applications, Hearings, Dockets)

## United Mail Case Reopened

United Air Lines' mail rate case was reopened briefly Jan. 22 before Examiner J. Francis Reilly to permit stipulation into the record of schedules and traffic statistics for AM-12. The hearing was ordered after UAL had informed CAB that passenger loads upon certain AM-12 schedules have become so small that operation of these schedules would not be justified after Jan. 1, 1941.

## Pacific Coast Airlines to Amend Application

Pacific Coast Airlines has filed notice of intention to amend application to provide transportation of persons, property and mail between terminal El Centro, Cal., intermediate points Palm Springs, San Bernardino, Los Angeles, Bakersfield, Fresno, Merced, Modesto and beyond Modesto to (a) intermediate point San Francisco and terminal Oakland, and (b) intermediate point Stockton and terminal Sacramento. Original application dated Aug. 8, 1939, sought Sacramento-Los Angeles, via Stockton, Modesto, Merced, Fresno and Bakersfield.

## All American Asks Four More Stations

At request for service from the communities, All American Aviation filed application Jan. 22 for extension of air pick-up service to Bradford and Kane, Pa., and Olean and Salamanca, N. Y.

## REA Interlocking Relationship Request

Withdrawal of applications of Van Dyck Fort, David L. Gray, Marion J. Wise and Railway Express Agency Inc. for approval of interlocking relationships of individual applicants has been authorized by CAB.

## United Granted Interventions

United Air Lines has been granted permission to intervene in action of (1) Transcontinental & Western Air for Los Angeles-San Francisco, for amendment of AM-37 certificate to authorize carriage of mail to and from Oakland, and for addition of Los Angeles as intermediate point; (2) Western Air Express for Los Angeles-San Francisco.

## Braniff Granted Intervention

Braniff Airways has received permission to intervene in application of Wichita Falls Air Transport Co. for Oklahoma City, Okla.-Midland, Tex., via Chickasha, Lawton, Wichita Falls, Abilene, Sweetwater and Big Spring.

## Crawford and Lochiel Approved

CAB has approved interlocking relationships of Frederick R. Crawford as executive vice president, secretary and director of Pennsylvania-Central Airlines and vice president-director of Pittsburgh-Butler Airport Inc., and of Raymond G. Lochiel as treasurer-comptroller of PCA and secretary, treasurer and director of Pittsburgh-Butler Airport.

## United Seeks Four More Stops on AM-11

Amendment of AM-11 certificate to include Visalia, Merced, Modesto and Stockton, Cal., as intermediate points is sought by United Air Lines in application filed Jan. 25.

## PCA Asks Raleigh Intervention

Pennsylvania-Central Airlines has filed motion to intervene in application of Eastern Air Lines for service to Raleigh, N. C., on AM-5.

## Alaskan Interlocking Relationship OK'd

Interlocking relationship of Sigurd Wien, president of Wien Alaska Airlines Inc., Fairbanks, Alaska, as managing officer of Mirow Air Service, Nome, Alaska, has been approved by CAB.

## Braniff Withdraws Complaint

Braniff Airways has been authorized to withdraw its application, filed June 5, 1939, seeking review of Postmaster General's order designating an American Airlines schedule between Ft. Worth, Dallas and Chicago for transportation of mail, together with complaint against American Airlines for "unfair and deceptive practices and unfair methods of competition."

## TCA Drops Interest in Toronto-Detroit

Trans-Canada Air Lines has asked permission to withdraw its Toronto-Detroit application.

## Wilmington-Catalina Changes Name

Catalina Air Transport is the new name of Wilmington-Catalina Airlines Ltd., and the latter's certificate should be revised to reflect the change, the company notified CAB, Jan. 27.

## Vanderbilt Interlocking Relationships

Interlocking relationships of Harold S. Vanderbilt as director of Eastern Air Lines and director of Pullman Co. have been disapproved by CAB, since "applicants have not made a due showing . . . that the public interest will not be adversely affected." However, approval was given to relationships of Vanderbilt as a director of Eastern and of 24 railroad companies.

## Northwest Amends Seattle-Vancouver Request

Northwest Airlines amended its application for Seattle, Wash.-Vancouver, B. C., on Jan. 31, to apply in alternative for Seattle-Vancouver via Bellingham, Wash.

## United Seeks South Bend Service

Certificate amendment to include South Bend, Ind., as intermediate stop on AM-1, New York-San Francisco, is sought by United Air Lines in application filed Jan. 28.

## Mayflower Wants Mail

Mayflower Airlines Inc. on Jan. 28 applied for certificate amendment authorizing carriage of mail on its route from Boston to Nantucket, Mass., via Provincetown, Hyannis and Oak Bluffs.

## New Routes Awarded

Pennsylvania-Central Airlines has been awarded a Pittsburgh-Birmingham route, while Delta Air Corp. was granted Cincinnati-Atlanta and Augusta-Savannah. Complete story on page 23.

## Two Intervene in PAA-Export Case

Braniff Airways and Eastern Air Lines have received permission to intervene in actions of Pan American Airways Inc. and American Export Airlines for service between New Orleans and points in Central America.

## American and City of Boston Intervene

American Airlines and Boston Port Authority have been granted leave to intervene in applications of United Air Lines and TWA for Boston-Cleveland and Boston-Pittsburgh, via intermediate points.

## Pan American Exemptions Extended

Two CAB orders issued Oct. 9, 1940, have been amended to extend exemption date from Feb. 1 to Apr. 30, 1941: (1) Permitting Pan American-Grace Airways Inc. to serve Balboa, C. Z., as intermediate point on Cristobal-Cali, Colombia, route; (2) Permitting Pan American Airways Inc. to operate non-stop service with Boeing S-307 craft from Miami to Balboa, in place of terminal point Cristobal.

## Southern Aviation Corp. Seeks Pick-Up Routes

A system of four air pick-up routes in Tennessee and Kentucky is sought by Southern Aviation Corp. in application filed Jan. 28. Complete story on page 23.

## Approval of Cone's Relationships Sought

Application filed Feb. 1 seeks approval of J. Carroll Cone as assistant vice president of Pan American Airways Inc., Pacific Alaska Airways Inc., PAA Co. (Del.), PAA Co. (Nev.) and PAA Corp., and as vice president of Marine Airport Corp.

## Oral Argument on U. S.-Canada Routes

Oral argument was held Jan. 30 on applications of Canadian Colonial Airways Inc., Pennsylvania-Central Airlines, Northwest Airlines and American Airlines for routes between the U. S. and Canada, with TWA, Trans-Canada Air Lines and United Air Lines present as interveners. Examiners Thomas Wrenn and Albert Forster in reports issued Dec. 31 had recommended a Toronto-New York route for Trans-Canada, a Buffalo link for American, and denial of other applications.

Alexander Dick, CCA counsel, described the company's need for expanding beyond its present route mileage of 340 and told CAB members Harlee Branch, Oswald Ryan and George Baker, that operating cost of 78c per revenue mile would be substantially reduced if CCA could keep planes in the air four or five hours daily instead of between two and three as at present. Toronto-New York, destined to become an important trunk line, will not receive proper service if Buffalo-Toronto is given to American, Dick said, since that carrier would operate the route with shuttle services, Toronto-Buffalo and Buffalo-New York, rather than as a through operation as intended by CCA. Granting Buffalo-Toronto to American would increase and perpetuate that company's monopoly in the territory, and "with monopoly, quality of service goes down and cost goes up," it was warned.

One of PAA's purposes in applying for its present Washington-Buffalo route was to furnish service between Washington and the Canadian border "and beyond when treaty arrangements permit," G. F. Ludington, PAA counsel, explained, adding that Buffalo-Toronto would enable company to utilize its equipment to greater extent. Granting Buffalo-Toronto to American, he stated, would have a "serious competitive effect" on PAA, since American would be able to carry all Washington-bound passengers via New York.

Representing Northwest which seeks to extend its operations to New York, Seth Richardson told the Board that the case is the most important to come before it, with possible exception of the American Export-Pan American trans-Atlantic fight. He pointed to the importance of allowing Northwest to "complete its line" and become a fourth transcontinental carrier. In addition to being the shortest, such a transcontinental route would have international importance because of its location near the Canadian border, he said. Richardson stated that at present Detroit is "wholly monopolized" by American, and referring to American, he said the Board should "trim it, not increase it."

Hamilton Hale, American counsel, suggested that charges of monopoly were never raised against American until the company was operating at a profit. If awarded Buffalo-Toronto, his company would be able to offer the "strongest competitive service" to that of TCA, which would operate Toronto-New York non-stop, he said. Most of the traffic from Toronto is destined toward New York and eastern points, rather than to places along PAA's AM-34 to Washington, Hale declared.

For TCA, J. Raymond Hoover told the Board that he did not believe that the international agreement between the U. S. and Canada, intended that a strong competitive service should be set up by an American carrier between Toronto and New York, and that two services between the cities are not needed today.

Both Gerald Brophy, representing TWA, and Paul Godehn, of United, opposed Northwest's Chicago-New York application, Brophy declaring that Chicago-New York has already proved a "headache" for the CAB and entrance of Northwest into the field would only "complicate" the situation. Northwest would be "walking into a losing proposition," Brophy asserted.

## PAA Seeks New York-San Juan

Application for New York-San Juan, Puerto Rico, was filed by Pan American Airways Co., Feb. 1. Complete story on page 23.

## TWA Asks Moline Intervention

Transcontinental & Western Air has entered motion to intervene in application of Braniff Airways for service to Moline, Ill., on AM-9.

## C & S Petitions for Higher Mail Rates

System base mail rate of 44c per airplane mile is asked by Chicago & Southern Air Lines in application filed Jan. 28. Complete story on page 22.

## SUMMARY OF PAN AMERICAN AIRWAYS OPERATIONS FOR NOVEMBER

(Compiled and Mileage Costs Computed from CAB Reports<sup>a</sup>)

	Rev. Pass. Miles	Seat Miles Operated	Pass. Load Factor	Yen-Miles U. S.-Mail	Pass. Revenue	U. S. Mail Revenue	Foreign Mail Revenue	Operating Revenue	Operating Expense	Cost per b. Mile Fl.	Net Revenue From Operations	
Pacific Alaska Airways Inc., Juneau-Fairbanks . . .	272	167,078	375,886	61.2%	4,678	\$ 19,668	\$ 9,708	\$ 0 00	\$ 33,833	\$ 83,387	\$1.06	\$ 19,523 (red)
Pacific Alaska Airways Inc., Seattle-Juneau . . .	12	11,304	71,953	15.7%	1,946	1,000	0 00	0 00	1,380	40,963	3.14	39,602 (red)
Pan. Am. Airways Co., New York-Bermuda . . .	82	42,432	61,200	69.3%	33	3,252	9,100	8,882	34,321	3.02	25,438 (red)	
Pan. Am. Airways Co., New York-Liberal . . .	146	635,389	1,218,868	35.7%	44,698	33,658	194,814	229,520	462,259	6.11	408,861 (red)	
Pan. Am. Airways Co., San Francisco-Auckland . . .	112	471,033	909,697	77.3%	9,303	42,821	0 00	13,278	61,011	179,148	4.16	118,133 (red)
Pan. Am. Airways Co., San Francisco-Hong Kong . . .	198	940,600	1,213,281	77.5%	28,327	65,374	234,742	24,169	340,952	341,319	4.16	362 (red)
Pan. Am. Airways Inc., Eastern Division . . .	5,857	3,281,504	5,679,828	87.8%	273,724	404,196	3,008	800,227	708,198	1.54	95,930	
Pan. Am. Airways Inc., Western Division . . .	3,229	1,421,634	3,780,594	37.6%	112,577	182,755	16,099	362,672	298,342	1.31	67,329	
Pan. Am.-Grace Airways Inc. . . . .	1,648	1,325,343	2,199,594	60.3%	10,660	113,778	196,967	18,772	349,598	299,674	1.84	49,924
Panama Airways Inc. . . . .	160	8,600	11,760	47.6%	0 00	1,312	0 00	0 00	2,346	7,488	7.488 (red)	
Urbana, Medellin & Central Airways Inc. . . .	201	49,444	190,614	26.2%	0 00	5,004	0 00	78	10,208	17,692	1.66	7,488 (red)

a All monthly reports to the CAB are subject to revision and year-end adjustment.  
b Yenching Airways Inc. is a wholly owned subsidiary of the Yenching Air Transport Co., Ltd., of China.  
c Includes \$6,724 reserve established in November for cumulative unrealized foreign mail income.  
d Includes \$11,647 reserve established in November for cumulative unrealized foreign mail income.  
e Includes \$11,647 reserve established in November for cumulative unrealized foreign mail income.  
f Includes \$64,948 reserve established in November for cumulative unrealized foreign mail income.  
g Operating cost per mile includes only that part of net reserve for unrealized foreign mail income applicable to November.  
h Not reported by company.

<sup>a</sup> All monthly reports to the CAB are subject to revision and year-end adjustment.  
<sup>b</sup> Total operating expenses divided by total plane miles; computed to nearest half-cent.  
<sup>c</sup> Includes \$6,724 reserve established in November for cumulative unrealized foreign mail income.  
<sup>d</sup> Includes \$617,486 reserve established in November for cumulative unrealized foreign mail income.  
<sup>e</sup> Includes \$11,647 reserve established in November for cumulative unrealized foreign mail income.

<sup>f</sup> Includes \$84,948 reserve established in November for cumulative unrealized foreign mail income.  
<sup>g</sup> Operating cost per mile includes only that part of new reserve for unrealized foreign mail income applicable to November.  
<sup>h</sup> Not reported by company.



**Northwest Asks Alaskan Route**

Northwest Airlines has filed application with the CAB for a route from Minneapolis to Fairbanks, Alaska. Complete story on page 25.

**Air Freight Routes Proposed**

American Air Freight Corp. has informed the CAB of its intention to file applications for four air cargo routes. Complete story on page 22.

**Youngstown Recommended for UAL and PCA**

Recommendation that United Air Lines and Pennsylvania-Central Airlines be allowed to serve Youngstown, O., as intermediate stop on AM-1, New York-San Francisco, and AM-14, Norfolk-Detroit, respectively, was made in proposed report issued Jan. 28 by Examiner Albert E. Forster. Two types of services are proposed. The examiner explained, pointing out inclusion of Youngstown on AM-1 would afford that city "important trunk-line transcontinental service to New York, Chicago and West Coast points," while PCA would offer "short-haul inter-city" connections with Pittsburgh, Cleveland, Detroit and other communities with which Youngstown has an extensive and close industrial relationship.

**TWA Favored over UAL for Reading, Pa., Stop**

TWA should be permitted to serve Reading, Pa., on AM-2, New York-Los Angeles, but United Air Lines should be denied its request for service to the same city on AM-1, New York-San Francisco, Examiner John Belt advised in proposed report issued Jan. 31. Service by both airlines is not required, Belt said. In choosing between the carriers, he found that there is a greater community of interest between Reading and cities on TWA's system than on United's.

**PAA Motion to Consolidate Hearings Denied**

Motion of Pan American Airways Inc. to consolidate PAA and American Export Airlines applications for new routes between New Orleans and Central American points for hearing with application of Export for approval of TACA acquisition was denied by CAB, following oral argument Jan. 28. Henry Friendly, PAA counsel, told CAB members Oswald Ryan, G. Grant Mason Jr. and George Baker that the future of American air transportation in Central America is involved in these applications and that, since it is inconceivable that the Board would decide the new route applications without some reference to TACA operations, the Board should have all relevant evidence before it in the record of a single proceeding. Opposing the motion for consolidation of applications for hearing, Gerald Brophy, Export counsel, and Donald Markham, CAB counsel, declared that different issues and concepts are involved in each case, and that issues of acquisition should not be confused with problems present in a new route application. PAA will appear as intervenor in the TACA proceeding.

**Mid-Continent Wants Joplin Stop**

Mid-Continent Airlines has filed petition for certificate amendment to include Joplin, Mo., as intermediate point on AM-26, between Kansas City and Tulsa.

**Pan Am Permitted to Re-Route Atlantic Service**

Temporary exemption order was issued by CAB Jan. 25 authorizing Pan American Airways to route westbound trans-Atlantic flights via Bolama, Portuguese Guinea; Port of Spain, Trinidad; and San Juan, Puerto Rico, in place of intermediate stops at Horta, the Azores, and Hamilton, Bermuda. Complete story on page 23.

**Examiner Urges Manila-Singapore Route for Pan Am**

Certificate of Pan American Airways Co. (Nev.) should be amended to permit operations between Manila and Singapore for period of two years, Examiner Francis W. Brown recommended in advisory report issued Jan. 25. Complete story on page 26.

**National Files for New Route, New Stop**

National Airlines on Feb. 6 filed applications for (1) transportation of persons, property and mail along new route between Tampa and New Orleans, and (2) certificate amendment to designate West Palm Beach, Fla., as intermediate stop on AM-31, between Ft. Myers and Miami. Complete story on page 28.

**Northeast Name Approved**

CAB on Feb. 6 authorized change in name of Boston-Maine Airways Inc. to Northeast Airlines Inc. and ordered company's certificate amended accordingly.

**REA Asks Approval of Directors**

Railway Express Agency Inc. applied Feb. 6 for approval of Charles W. Van Horn and Golder Shumate as alternate or substitute directors.

**Calendar of Hearings**

Feb. 17—American Export Airlines, acquisition of TACA, S.A.  
Feb. 25—Alaska Air Lines and Pacific Alaska Airways, service between Juneau and Anchorage, Alaska, plus additional stops.  
Feb. 26—Eastern Air Lines and TWA, new routes between St. Louis and Washington, D. C.

**Doubt TACA Ousting**

Officials of American Export Airlines discount as "inspired" a newspaper story from Guatemala City, Guatemala, to the effect that TACA airline, purchased last year by American Export, has lost its operating franchise in that country. Guatemala is one of five countries served by TACA and various efforts have been made tooust the company from Guatemala and one other Central American country. It is not believed that final action has been taken one way or another.

**British Airways' 1940 Mark**

During war year 1940, British commercial aircraft flew some 5,000,000 miles and carried, besides passengers and freight, nearly 30,000,000 air mail letters, according to British Overseas Airways Corp. It is estimated that currently 100,000 miles are covered weekly by flying-boats and land planes of British Airways, operating from Lisbon down the west coast of Africa to Lagos, across the continent to Cairo in the east, Durban, Sydney, and Auckland.

## Malfunctioning of Salt Lake Range Caused United Crash, CAB Asserts

Malfunctioning of the CAA's Salt Lake radio range was the probable cause of the crash of United Air Lines' trip 16 on Nov. 4, resulting in the death of 10 persons, according to a report issued by the Civil Aeronautics Board on Feb. 8.

One contributing factor given by the Board was the "failure of the communications operators at Tintic, Plymouth and Salt Lake City, Utah, whose duty it was to monitor the range, to detect its malfunctioning and immediately notify those concerned." These operators are employees of the Civil Aeronautics Administration.

The other contributing factor given was "the failure of the pilot of trip 16 to follow to the fullest extent established radio range technique in accordance with the requirements of the procedure established by United and approved by the Civil Aeronautics Administration."

Recommendations made by the Board were as follows:

1. That the CAA study the components of the Salt Lake range to discover the reasons for the known effects of certain atmospheric conditions on its functioning and improve the stability of the range accordingly.
  2. That the CAA make a thorough study of the radio range monitoring system to achieve immediate detection of malfunctioning and reporting on it so that prompt warnings may be issued. Consideration should be given to doing away with the present practice of the monitors depending entirely upon aural reception by supplementing the present installation with effective visual indicators.
  3. That review should be made of the present methods of training and periodic examining of communications personnel to obtain those fully capable of performing the heavy responsibilities involved. Every effort should be made to increase the compensation they receive so that personnel of high caliber can be retained.
  4. That work now being carried on by the CAA of developing and service-testing ultra-high frequency radio ranges "be hastened to the greatest extent possible, particularly with respect to the determination of the values of such ranges in mountainous terrain where adequate reception of radio signals is especially important."
  5. That let-down procedure for all airports should be standardized for all aircraft, both civil and military, so far as existing differences in characteristics of the planes and their equipment permit.
  6. That a study be made of the advisability of inspecting, rating and certifying air navigation aids not owned or operated by the CAA, such as the Salt Lake airport localizer.
- "The behavior of the various operators (CAA) subsequent to the accident indicates a lack of appreciation of the importance of monitoring which makes it appear all the more probable that the monitoring reports in the early morning of the 4th, prior to the accident, are unreliable," the CAB said.
- The malfunctioning of the Salt Lake

range "resulted from the effect of atmospheric conditions upon some defective component of the range equipment," it added.

Capt. Howard M. Fey, the Board claimed, "began his descent (at Salt Lake) during a period of time when, because of heavy static, he was unable to hear radio range signals and thus without definitely locating his position with respect to the normal north leg of the Salt Lake City radio range; and after he had emerged from the area of severe static proceeded north receiving 'A' or 'A' twilight signals."

In doing so, the report charged, Capt. Fey "failed to comply with well-established range procedures designed to permit the execution of let-down-through procedures with maximum safety."

## Canada's Worst Crash Kills 12

The worst disaster in Canadian aviation history occurred Feb. 6 when a Trans-Canada Air Lines' plane crashed near Armstrong, Ont., killing nine passengers and a crew of three.

Crew members killed were Capt. W. E. Twiss, First Officer C. E. Lloyd and Stewardess M. G. Mayne.

The plane, bound from Montreal to Winnipeg, crashed after Capt. Twiss had notified the Armstrong airport that he was about to make a routine landing. Armstrong is 319 miles east of Winnipeg. The crash occurred at approximately 4:00 A. M. A light snow was falling at the time, but it is said that flying conditions were not unfavorable.

## TWA Has NOT Sold Its Stratoliners to Britain

Transcontinental & Western Air Inc., has not sold its five four-engine Boeing 307 Stratoliners to the British and has not agreed to do so, it is learned reliably. Newspaper reports indicated that negotiations for such a sale were approaching consummation.

TWA was approached informally by a broker some months ago, but the answer at that time was no. In November an official of the National Defense Commission suggested that TWA transfer its planes to the British, but the answer was again in the negative. In the meantime the British found, by calculations, that the Stratoliners could not be used for the desired purpose, but are understood to be desirous of purchasing the planes if and when TWA will sell for use somewhere on the Empire routes.

While the door to future negotiations is not closed, it is not considered likely that TWA will consider selling until it is assured of suitable replacements, or unless a price is offered which is especially attractive. All discussions to date have been in very general terms.

## Six United Air Lines' Promotions



Recent promotions in United Air Lines' organization follow, left to right: HOMER J. MERCHANT, former regional traffic manager at Los Angeles, appointed western sales manager with headquarters at San Francisco. R. F. AHRENS, former regional traffic manager at Chicago, named eastern sales manager at the same location. ERNEST J. GALBOS, newly appointed assistant d.t.m. at Cleveland. S. R. NEWMAN, who has served as district traffic manager at Portland, Ore., has become d.t.m. at Los Angeles, succeeding Merchant. W. R. THIGPEN succeeds Newman as district traffic manager at Portland, Ore. GEORGE E. HATCH becomes district traffic manager at Chicago, succeeding Ahrens.

ceeding Ernest J. Galbos, newly appointed assistant d.t.m. at Cleveland. S. R. NEWMAN, who has served as district traffic manager at Portland, Ore., has become d.t.m. at Los Angeles, succeeding Merchant. W. R. THIGPEN succeeds Newman as district traffic manager at Portland, Ore. GEORGE E. HATCH becomes district traffic manager at Chicago, succeeding Ahrens.

## PAA Gets \$12,000,000 Federal Funds For Latin American Airports, Radio

Although no details have been available officially in Washington, Pan American Airways is the recipient of approximately \$12,000,000 for airport and radio construction in Central and South America, including a number of Caribbean points, from funds supplied, it is believed, from the special appropriation made last year by Congress for the President to use at his discretion for national defense purposes.

The War Department is officially coordinating the construction program and the U. S. Corps of Engineers is expected to supervise the project. Because of the large amount of equipment to be used in construction, a number of construction firms, most of them known nationally, have pooled their equipment and the work is being directed by Caribbean Engineering Corp. in New York, a company set up especially for this purpose.

According to reports in Washington which could not be confirmed officially, the contract or agreement gives Pan American exclusive use of the airports improved and constructed, although the Army and Navy will, of course, be permitted to have full use of them. It is believed that since federal funds are being used that this restriction, if it exists, will not be workable.

Origin of the airport and radio program is understood to be with Pan American, but John C. Cooper, PAA vice president, referred all inquiries

to the War Department. From the government angle it was said that the U. S. could not very well build its own airports in foreign countries, but that Pan American could improve its existing facilities with U. S. help and accomplish the same purpose of providing needed airports to the south.

Originally the Army Air Corps was desirous of having the Civil Aeronautics Administration extend the domestic civil airways system to the Canal Zone, but this plan was abandoned when PAA stepped into the picture. Thus the new radio facilities will feature PAA's radio direction finder and code communication rather than the radio range system now in use in this country.

Army pilots flying from bases in this country to the Canal Zone will accordingly fly the domestic radio range system to the Mexican border, and then switch to radio direction finding stations, necessitating additional equipment in planes. The plan to extend a uniform civil airways system throughout the western hemisphere is indefinitely postponed as a result of the new program.

Preliminary work already has started. L. L. O'Dell, chief airport engineer for PAA, and Andrew Lewis, his assistant, are directing the work for PAA. It is understood that construction will be generally executed by private contractors through Caribbean Engineering Corp.

## Pan Am Wins Permission to Re-Route Trans-Atlantic Flights via Africa

If in the struggle for new routes any value attaches to getting there first, Pan American Airways scored a point on American Export Airlines when it was granted temporary permission to re-route its westbound trans-Atlantic flights via Africa, in an exemption order issued by the Civil Aeronautics Board, Jan. 23.

In exempting Pan Am from restricting provisions of the Civil Aeronautics Act so as to allow the carrier to return from Lisbon via Bolama, Portuguese Guinea; Port of Spain, Trinidad; and San Juan, Puerto Rico, the CAB overruled objections raised by Export which had contended that Pan Am was in effect seeking a new route without public hearing and that placing Pan Am in position of "pioneer" operator would seriously prejudice Export's future intention to fly across the South Atlantic to African ports.

The CAB based its decision on the emergency in westbound traffic from Europe and on the "undue burden" created by adverse weather conditions involved in winter operations via Horta, the Azores, and Hamilton, Bermuda. The order, designed to permit the alternative routing when weather conditions at Horta make operations thereto inadvisable, was approved by the President, Jan. 22, and is effective during the winter months to May 1, 1941.

### Survey Flight Made

Survey flight over the "circular" route, which besides providing the first air link between the U. S. and Africa will also furnish connection in the West Indies with Pan Am's South American network, left New York Feb. 1, eliminating the former fuel stop at Horta and making the 3,100-mile hop from Bermuda to Lisbon direct. Scheduled service along the 7,200-mile alternate westbound routing is expected to start soon after completion of the proving flight. The new westward trips will take about 56 hours to fly in regular operations, according to Pan Am, some 26 hours more than the former more direct routing.

In authorizing the new Clipper course for Pan Am, the CAB pointed out that the world-wide emergency, together with the curtailment of steam-

ship service between U. S. and Europe, has created a large volume of urgent westbound traffic which has been disrupted by the irregularity of companies winter service and the abnormally heavy mail loads which have displaced passengers on some flights.

Flight performance over the new route is estimated at 90% of schedules, compared with 60% last winter when sea conditions at Horta and unfavorable weather generally hampered Clipper operations.

Improvements in Pan Am's aircraft in the past year make possible non-stop flights eastbound from Bermuda to Lisbon with considerable payload, but on westbound flights against prevailing headwinds, a refueling stop at Horta is necessary, unless payload is "severely restricted," the CAB explained. Longest non-stop flight along the new westbound route is between Bolama and Port of Spain, 3,120 statute miles, but with winds blowing from east to west

### Cognomen

"Just Call Me C. R." is the title of the lead article in the *Saturday Evening Post* for Feb. 1, the story of C. R. Smith, president of American Airlines. The sub-title is "A Texan Builds an Airline on Friendship, Faith and Figures" and the story itself, written by Jack Alexander and illustrated by natural color photographs by Ivan Dmitri, bears out all of the promise expressed in the informal title. Alexander relates C. R.'s entrance into the airline picture, tells some Smith family history, describes C. R.'s "fabulous duplex ranch house in the heart of Manhattan," and gives a lot of sidelights into C. R.'s life, philosophy and job. Without doubt it's the No. 1 airline break in the public prints for 1941.

with "trade wind regularity" that distance will allow a westbound payload about as great as the non-stop eastbound flight, it was stated.

Under the exemption order, Pan Am will be allowed to carry passengers and property between Lisbon and Bolama, and between Port of Spain and New York, in order to make use of the greater payload which can be carried on those sections of the route than is possible on the long overwater flight from Bolama to Port of Spain. However, "it is not an undue burden upon applicant to require it to carry only Lisbon-New York passengers and property on the Bolama-Port of Spain section, except where the Board may grant special permission in particular instances for good cause shown," the order stated.

The order was declared in force pending final disposition of Pan Am application filed Oct. 29, 1940, asking certificate amendment to permit the alternate routing during period Dec. 1, 1940-May 1, 1941, and Dec. 1, 1941-May 1, 1942.

## National Seeks Tampa to New Orleans Route

A 500-mile over-water route between Tampa, Fla., and New Orleans, La., "including such other intermediate points as may be found in the public interest," is sought in application filed by National Airlines, Feb. 6. Company stated it would operate its Lockheed Lodestar equipment over the proposed route, indicating that the craft can be prepared for flotation by dumping the fuel from the tanks and closing the valves. It is estimated that \$50,352 air mail compensation would be required to break even on first year operations with one round trip daily.

National also entered petition to designate West Palm Beach, Fla., as intermediate stop on AM-31, between Ft. Myers and Miami.

## EAL's NY Reservations System



A new reservations system, enabling reservations salesmen to handle approximately 2,000 phone calls daily in the New York area alone, has been installed by Eastern Air Lines in the Grand Central Terminal Bldg. Incoming calls are received by a private branch exchange switchboard, and transferred manually to the large reservations room, which holds 24 salesmen. These salesmen confirm space on requests for one-way passage. An air-flow card communications system also enables them to expedite confirmation of round trip requests. Room for ultimate expansion from the 24 to 37 positions is provided, which would enable the handling of from 5,000 to 6,000 daily calls.

## PAN AM ANNOUNCES PENSION PROGRAM

### Will Cover Flight, Ground Personnel in U. S. and 49 Foreign Countries

The inauguration of a pension plan to cover 6,000 employees in the U. S. and 49 foreign countries and colonies was announced Jan. 31 by Pan American Airways Inc.

The plan is the second inaugurated by a U. S. airline, United Air Lines having started one several months ago. Pan Am and the employee will share the premium cost of the retirement income which, upon normal retirement will be equal to approximately 60% of the employee's annual pay averaged over the normal period of active service. Permanent employees stationed in the U. S. or its territories, and who have had at least one year of service, are immediately eligible to participate in the plan. Employees in foreign countries will be included as soon as the plan can be adjusted to any applicable social laws which are now in existence in any of those countries.

Pilots and flight personnel are eligible to participate in the plan at the age of 25, and retire at 60, with the same limits applying to women employees in all ground services and administrative offices. All other employees are eligible at 30 and retire at 65.

The Connecticut General Life Insurance Co. will administer the plan, with John Hancock Mutual Life Insurance Co. as participating underwriter.

## Emergency Justifies PAA Singapore Route CAB Examiner Urges

Though admitting "doubt as to the commercial justification of the proposed service," CAB Examiner Francis W. Brown in advisory report issued Jan. 25 recommended that the certificate authorizing Pan American Airways to operate between San Francisco and Hong Kong should be amended to permit an extension from Manila to Singapore for a period of two years. The examiner explained "the record contains convincing evidence that the proposed service is of importance to the national defense in the present emergency."

Pan Am, which now maintains weekly service between Manila and Hong Kong, proposes to conduct operations to Hong Kong and Singapore on alternate weeks. This, while reducing the frequency of the Hong Kong service to a fortnightly basis, would enable the carrier to provide service between the U. S. and Burma, Malaya, Ceylon, Netherlands Indies, Thailand and India.

Examiner Brown pointed out that, according to the petitioner, "losses in revenue from sources other than U. S. mail which will result from the curtailment of the Hong Kong service... will be more than offset by the additional revenues from the inauguration of a fortnightly service to Singapore." Balancing the gain expected from non-mail revenue sources with anticipated losses from drop in mail volume, it is estimated that "only \$20,531 would be required to enable the carrier to meet additional expenses which will be incurred with service to Singapore" during first year.

Pan Am had requested issuance of a certificate authorizing service for five years, explaining that it should be given reasonable time to write off required investment and to compensate for the disruption of the Hong Kong service. However, the examiner indicated that the investment proposed "is not large and it does not appear that all of such investment would be lost even though service were discontinued." Since, "it is conceded that the heavy volume of traffic anticipated is due in part at least to the present world conditions, and there is no assurance that it would continue beyond the present emergency," authorization for the Singapore service should be limited to two years, he said.



## Four Air Pick-up Routes in Tennessee

### Valley Asked by Southern Aviation Corp.

A system of four air pick-up routes in Tennessee and Kentucky to be developed by All American Aviation is sought in application filed Jan. 10 by Southern Aviation Corp., a Tennessee corporation, 1000 American Trust Bldg., Nashville.

Proposed are: Route A, 430 miles, Nashville-Old Hickory-Gallatin-Hartsville-Scottsboro-Bowling Green-Franklin-Springfield-Guthrie-Clarksville-Jopkinsville-Cadiz-Paducah-Mayfield-Murray-Paris-Waverly-Dickson-Nashville; Route B, 400 miles, Nashville-Franklin-Columbia-Pulaski-Athens-Denton-Huntsville-Fayetteville-Lewisburg-Sheffield-Tullahoma-Manchester-McMinnville-Sparta-Cookeville-Carthage-Lebanon-Murfreesboro-Nashville; Route C, 375 miles, Memphis-Somersville-Brownsville-Jackson-Humboldt-McKenzie-Dresden-Martin-Tipton City-Fulton-Michman-Tiptonville-Dyersburg-Ripley-Covington-Williamson-Memphis; Route D, East of Knoxville, 262 miles, Knoxville-Morris-town-Rogersville-Kingsport-Bristol-Gilberton-Johnson City-Tri City Airport-Greeneville-Newport-Knoxville-Maryville-West of Knoxville, 105 miles, Maryville-Lenoir City-London-

Rockwood-Harriman-Oakdale-Petros-Clinton-Maryville.

In asking for a person, property and mail certificate, Herbert Fox, president, declared there is immediate need for transportation of mail and property by air in the Tennessee Valley, and that after establishment of such service there would be a demand for carriage of passengers with Southern Aviation performing as a feeder system for existing trunk lines. Extension of air pick-up operations throughout the country was urged by Fox as means for creating economically a large supply of pilots, observers and mechanics, available for military service when needed.

Southern Aviation proposes to acquire five 1937 model Stinson cabin planes available for \$6,000 each. Total cost of all required flying equipment is estimated at \$35,000, excluding \$2,000 for installation of pick-up devices. Operating expense, including all items, is judged at \$29,896 monthly or 39.4c a mile. Company has authorized 2,000 shares preferred stock, \$50-par, with 5% cumulative dividends, and 15,000 shares no-par common, and holds "binding subscriptions for the purchase of a portion of said stock which will net \$50,000."

## Canadian Colonial Out of Airlines Terminal

Opening of the new Airlines Terminal in New York City recently was marred by a lease dispute between Canadian Colonial Airways Inc. and terminal officials which culminated in the airline's giving up its space in the building and establishing a temporary office in Hotel Roosevelt.

When Canadian Colonial failed to sign the lease, electric light and power lines in its booth were shut off, and the company was forced to close up about a minute after opening.

Alfred M. Hudson, general sales manager of Canadian Colonial, said that his company had been asked to pay \$750 monthly for eight feet of counter space and \$512 monthly as its estimated share under the operating agreement with five other airlines. Hudson declared that the amount was exorbitant and that his company could not afford it. The lease, he said, had been shown to Canadian Colonial officials about three weeks before, the operating agreement 10 days before, and the advice that the company could not operate in the terminal unless it signed the lease was conveyed to the airline three days previous to the opening.

One official of the airline declared that the terminal was "attempting to black us," and that Canadian Colonial would never move into the building unless a successful compromise was reached.

A terminal official said a copy of the lease was sent to Canadian Colonial three weeks before the opening, giving the company ample time to study the rental price. The corporation's board of directors, he added, voted to require all airlines to sign a lease before beginning to operate. He explained that when Canadian Colonial failed to do this, a terminal official ordered the light turned off above the ticket window.

### EAL Has A Song

Eastern Air Lines now has a popular song to its credit. "From Frost to Flowers (In Just Eight Hours)," words and music by J. Fred Coots and Nick Kenny, has been dedicated to Eastern and was introduced by Mitchell Ayres' "Fashions in Music" NBC orchestra at LaGuardia Field recently. Coots and Kenny are friends of Beverly Griffith, Eastern's director of public relations, who spent many years in the moving picture industry. The Great Silver Fleet comes in on the refrain.

## Airline Personnel

**RALPH S. DAMON**, vice president in charge of operations of American, recently received a pin from C. R. Smith, AA president, marking completion of five years' service with the line. Damon became AA v.p. on Jan. 1, 1936. He formerly was vice president and general manager and later president of Curtiss Aeroplane and Motor Co. He developed the Curtiss-Wright Condor, the first luxury air transport and the first skyscraper plane. During the development tests on the Condor sleeper-plane, Damon and his wife often slept in the berths on the plane mock-up in the factory to gain first hand reactions to their comfort and to try to design new ways of improving them.

**George S. Hearn** recently was promoted to the position of supervisor of Canadian Colonial's New York reservations department. Prior to joining CCA, Hearn was with Penn-Central for three years. **J. R. Thomas** recently was appointed assistant station manager for American at LaGuardia Field, New York. E. M. Cozzens is also assistant station manager for the company at LG. B. L. Callahan, NY ramp agent, has been appointed chief ramp agent at LG, and W. R. Prall has been appointed assistant chief ramp agent.



Zawasky

**A. G. Kinsman**, Northwest's general traffic manager, has been appointed T. S. Zawasky to take over the company's newly created sales territory in southern Minnesota as district traffic manager at Rochester, Minn. Zawasky has been with NWA for two years, having formerly been in the Minneapolis city ticket office. Recently transferred from Miami to LaGuardia by Pan Am: Junior Pilots Joseph C. Barrett, Joe E. Fretwell, G. B. Randolph and W. A. Hibbs. Transferred to Miami in the same capacity were James N. Gentry, Willard B. Biggers, James M. McLeod, Edwin C. Perry, Cornelius K. Dunbar and L. C. Lindsay.

New additions to Canadian Colonial's NY reservations department are R. A. Ellsworth, Harry Baldwin and William Keller, all formerly of TWA. Ten American employees recently received 10-year Pioneer buttons. They are Otto E. Kirchner, chief engineer; Erich Miller, senior mechanic; O. Marion Braun, lead mechanic-radio; Ros-



Hearn

well K. Bullar, flight dispatcher, and John C. McLaughlin, inspector, all at New York; David T. Harris, captain, Chicago; Homer B. Dodge, senior mechanic, and Clyde S. McCall, captain, both of Ft. Worth; Donald E. Self, station chief operator, El Paso, and A. E. Buddemeyer, chief reservations agent, St. Louis.

WAE's Los Angeles d.t.m., Stan Cowen, has announced the appointment of Bud Baker, Roy Thompson, George Vaughan and G. Spencer to the traffic office.

In conjunction with the establishment of a new reservations department in Los Angeles, the following have been appointed by Russ Smith, Western Air reservations manager: Art Hewitt, Letcher Seamands, George B. Cain, Robert J. Tierney, Rex Abel and B. Piel.

**R. P. Brinkley**, PCA station manager at Detroit, has been named assistant traffic manager in charge of station sales with headquarters in Washington.

New TWA first officers are S. F. Gerding, D. G. Hendrickson, Richard R. Colburn, George E. Falkner, Floyd D. Hall, Robert W. Picotte and Leigh S. Moorhead, all based at Kansas City.

Newly appointed airport manager at Cienfuegos, Cuba, for PAA is Ulpiano Muniz, who has been replaced at San Julian de Cuba as airport manager by Radio Officer R. J. Morales.

**Thomas Blanchard** has been employed by UAL at Portland, Ore., as outside salesman to replace Al Nelson, transferred to San Francisco.

As operations manager with Avianca, Henry Shea, formerly a captain with Pan Am's eastern division, Miami, has been transferred to Barranquilla, Colombia.

Assistant Radio Mechanic G. R. Elliott recently was assigned by Pan Am to Treasure Island, San Francisco, and Apprentice Radio Operator Victor V. Palenzuela from that post to Manila.

**Reginald Robinson**, manager of Airways Bermuda Ltd. in Bermuda, having proceeded to England recently, was

## Airlines to Speed Training

(Continued from page 1)

by AMERICAN AVIATION, TWA has had eight captains and first officers called to active duty. Approximately 55% of the company's flying personnel hold reserve commissions.

United Air Lines has lost 14 of its flying personnel to the military services and to manufacturers. It is believed that about 12 of these are on active duty. The company reports that 58% hold commissions. An official stated that, as is the case with most airlines, United has encouraged commissions.

At present, UAL is training 95 pilots in its recently-established school at Tracy, Cal., and 20 of these are expected to be graduated by May 1.

Eastern Air Lines, with 54% of its flying personnel holding commissions, has lost eight captains and 11 first officers.

American Airlines reports that 25 captains and first officers have been called, and that 42% of its flying personnel hold commissions.

Most surprising of the five major airlines is Pennsylvania-Central, which states that none has been called and that only 13% hold commissions.

The airlines have offered to the government a plan of cooperation with the military services in training flying personnel, ground crews and maintenance crews in the course of daily airline operation, according to T. B. Wilson, chairman of the board of TWA.

"Many commercial airlines have their own schools and equipment for this sort of training, and this would afford the best and most economical way of providing advanced training for the younger men

who are to become pilots in the armed services," Wilson said recently. "The facilities are already there, and there would be no great expenditures or delays in getting this training program into operation."

Wilson pointed out that approximately 75% of the 2,000 domestic airline pilots hold commissions in either the Army, Navy or Marines.

"These men are trained in caution and safety—trained to haul men and goods, not in the tactics of combat flying," he said. "Years of careful, conservative operation have instilled in them the lesson of extreme caution. Their greatest value is their knowledge and experience, and their usefulness to the armed services lies chiefly in their ability to train younger men. The flying personnel of the commercial airlines are needed in a branch of the military organization which comes under the head of training and supply, rather than attack."

Capt. Eddie Rickenbacker, president of Eastern, stated recently that he has long favored a plan for including military pilots as "third members" of airline crews. These pilots, Capt. Rickenbacker said, would ride the jump-seat and would be furnished with a set of headphones to assist them in becoming familiar with scheduled operations. After a period of training, such pilots might ride as co-pilots, he added. Capt. Rickenbacker indicated that in this way airline pilots holding commissions could assist in the training of military personnel without being called away from their jobs, with the consequent disruption of service.

succeeded by Erik Nelson, newly appointed manager. John Longhurst arrived in Bermuda recently from England to assume duties as station superintendent.

Additional American employees who were awarded 10-year service pins are: Lawrence Shea, asst. chief cost accountant; William C. Carnegie, flight dispatcher; and William H. Woodstone, fleet service cleaner, all of New York; Adam Russell, station manager, Douglas, Ariz.; David T. Cummings, senior mechanic, Buffalo; Ernest Petteway, captain, Ft. Worth, and Roy G. Daniel, senior R-graph operator, Tucson, Ariz.

**Donald R. MacKay**, formerly with Pan Am, has joined United's Chicago office to handle the theatrical, advertising and radio fields. He began his aviation career with UAL in New York in 1933.

TWA has employed William M. Schwarz as engineer in Kansas City.

**W. F. Hughes**, PCA passenger agent at Grand Rapids, has been assigned as assistant d.t.m. there. New traffic representatives for the company are James Rourke at Detroit, Harry Lane at Pittsburgh.

**A. K. Durrett** is in charge of United's new reservations office at Denver Municipal Airport.

**David F. Todd**, PAA's assistant d.t.m. at Cleveland, has been appointed industrial traffic manager with headquarters in Washington.

New TWA assistant flight superintendent at LaGuardia Field, New York, is E. E. Basham.

A genuine "air-rail connection" was announced recently in the engagement of Miss Elsie Skyrud, courier-nurse of the Santa Fe Railroad and Daniel W. O'Leary, d.t.m. for United in Detroit.

**James E. Hord** has joined EAL as a pilot at Miami.

First Officer Ralph Philipps of PAA has been transferred from the Pacific division to the eastern division as reserve captain. Also to Miami from Treasure Island: Junior Pilots S. S. Griffin, Frank P. Merryman, H. C. Hamel and C. H. Cofield.

## Northrop Boosts Four Executives

Directors of Northrop Aircraft Inc. on Jan. 29 elected four more officers of the company, according to an announcement by LaMotte T. Cohu, chairman.

Ted C. Coleman, who joined the company in July 1940 as secretary, was elected vice-president in charge of sales. Since joining Northrop, Coleman has been in charge of the sales department in addition to his duties as secretary.

Moye W. Stephens, former assistant secretary, was elected secretary. He has been supervising all test flights of the Northrop patrol bomber.

Claude N. Monson, formerly assistant treasurer, has been made the chief financial officer of the company.

George Gore, who recently joined the company in a legal capacity, was elected assistant secretary. Gore was formerly associated with the legal firm of O'Melveny and Meyers, the corporation's attorneys.

Additional officers of the company are Cohu, general manager and board chairman; John K. Northrop, president, and Gage H. Irving, vice-president in charge of production.

## Kaltwasser Named General Manager of Stinson Division

Appointment of Carl M. Kaltwasser as general manager of Stinson Aircraft Division of Vultee Aircraft Inc. was announced late in January by Richard W. Millar, Vultee president. Kaltwasser, who has been closely identified with Vultee production activities since the company acquired the Stinson plants at Wayne, Mich., and Nashville, Tenn., last year, will direct operations at the Wayne factory. He takes the office vacated Nov. 15 by L. E. Reisner who is now president of Tennessee Aircraft Institute Inc.

In making the announcement, Millar said: "It is our plan to encourage in every way possible the development of the private plane field through the activities of the Stinson Division of the company."

A graduate of Stevens Institute, Kaltwasser's business experience has extended to the automotive, shipbuilding and aviation field and to the utilities industry.

Immediately prior to his work with the Stinson Division, Kalt-

## New Division Head



**Carl M. Kaltwasser**  
Former president of Marvel-Schebler Carburetor Division of Borg-Warner Corp., has been appointed general manager of Vultee Aircraft's Stinson Division at Wayne, Mich.

wasser was president of Marvel-Schebler Carburetor Division of Borg-Warner at Flint, Mich.

## L. D. Bell Elected To Sterling Engine's Board of Directors

Lawrence D. Bell, president and general manager of Bell Aircraft Corp. late in January was elected to the board of directors of Sterling Engine Co., Buffalo, N. Y., builder of marine engines for 40 years.

Of interest to Bell, founder of the Buffalo aircraft company which bears his name, has been Sterling's "Admiral," a 12-cylinder gasoline engine which is reputed to have set new records among marine engines in lightness of weight in proportion to horsepower developed. The Admiral is in quantity production for the U. S. Navy and for Britain.

Before launching the Bell corporation in 1935, Bell was vice president and general manager of Consolidated Aircraft Corp. He received his early training in airplane manufacturing at the Glenn L. Martin factory in Los Angeles long before he left the Martin organization in 1928 he had risen to the post of vice president and general manager.

Bell also is on the board of directors of Irving Air Chute Co. Inc. of Buffalo and is a member of the board of governors of the Aeronautical Chamber of Commerce.

## Mfrs. Aircraft Assn. Names New Officers

Samuel S. Bradley was re-elected chairman of the board of Manufacturers Aircraft Association Inc. at the annual meeting held in New York City recently. Frank H. Russell will continue as president and John A. Sabin as general manager.

Vice presidents are Robert E. Gray, Lockheed Aircraft Corp.; J. H. Kindelberger, North American Aviation Inc.; John M. Rogers, Douglas Aircraft Co. Inc.; William E. Valk, Curtiss-Wright Corp.; and Eugene E. Wilson, United Aircraft Corp.

James P. Murray, Boeing Aircraft Co. was named secretary; and Clayton J. Brukner, Waco Aircraft Co., was re-elected treasurer.

Board of directors for 1941 includes Bradley, Brukner, Murray, Rogers, Russell, Valk, Edgar N. Gott, Consolidated Aircraft Corp.; Joseph T. Hartson, Glenn L. Martin Co.; S. W. Voorhes, Lockheed Aircraft Corp.; Charles H. Chaffield, United Aircraft Corp.; Ray F. Whitman, Bell Aircraft Corp.; and Leland R. Taylor, North American Aviation Inc.

In his annual report, Russell declared that the latest models of American military aircraft rank with the best in the world and in most classes are superior to those produced in other countries. U. S. commercial airplanes, he said, have far outdistanced their closest competitors.

"With reference to the more immediate affairs of the Association," Russell continued, "it has become increasingly apparent that much of the progress made during the past year may be attributed to the soundness of the principles underlying the cross-license agreement."

"There has been no delay due to patent controversy within the aircraft industry. All manufacturers have been free to apply the most advanced ideas to current models without the necessity for protracted negotiations."

"By continuing to make important technical progress available to all manufacturers we have encouraged engineering and research while completely eliminating the possibilities of any monopolistic tendency within the industry," Russell concluded.

## 200 Lycoming 65's Shipped to Taylorcraft

An entire carload of Lycoming 65-hp. engines, comprising 200 units, recently left Lycoming's plant in Williamsport, Pa., on its way to the factory of Taylorcraft Aviation Corp. in Alliance, O. The shipment was said to be the greatest mass delivery in lightplane history.

## DEFENSE PLANT CORPORATION AIRCRAFT COMMITMENTS

As of Jan. 6, 1941

Lessee	Amount	Purpose
Aero Supply Mfg. Co. Inc., Corry, Pa.	\$600,000	Build plant and buy machinery and equipment for manufacture of aircraft parts.
Bendix Aviation Corp., South Bend, Ind.	\$10,000,000	Plant expansion, equipment and machinery for production of plane parts, carburetors and landing gear.
Bendix Aviation Corp., Bendix, N. J.	\$11,500,000	Plant construction, expansion, equipment and machinery for production of plane parts, accessories and instruments.
Bendix Aviation Corp., Bendix, N. J.	\$2,550,000	Plant construction, expansion, equipment and machinery for manufacture of aircraft engine ignition devices.
Bendix Radio Corp., Baltimore, Md.	\$1,685,000	Plant construction, expansion and machinery for production of aircraft radio devices and instruments.
Cleveland Pneumatic Tool Co., Cleveland, O.	\$4,000,000	Buy machinery for production of machine tools for use in aircraft production.
Consolidated Aircraft Corp., San Diego, Cal.	\$14,446,929	Plant construction and equipment and machinery to manufacture airplanes and parts.
Curtiss-Wright Corp., Buffalo, N. Y.	\$14,989,100	Build and equip plant and buy machinery for manufacture of airplanes.
Curtiss-Wright Corp., Buffalo, N. Y.	\$13,471,150	Build and equip plant and buy machinery for manufacture of airplanes.
Curtiss-Wright Corp., Buffalo, N. Y.	\$13,181,950	Build and equip plant and buy machinery for manufacture of airplanes.
Curtiss-Wright Corp., Caldwell, N. J.	\$1,769,600	Buy machinery for production of airplane propellers.
Curtiss-Wright Corp., Indianapolis, Ind.	\$7,099,650	Buy machinery for production of airplane propellers.
Curtiss-Wright Corp., Pittsburgh, Pa.	\$8,000,000	Build and equip plant and buy machinery for production of airplane propellers.
Edo Aircraft Corp., College Point, N. Y.	\$365,000	Build and equip plant and buy machinery for manufacture and assembly of aircraft pontoons.
General Electric Co., Everett, Mass.	\$6,000,000	Build and equip plant and buy machinery for manufacture of superchargers.
General Motors Corp., Detroit, Mich.	\$32,000,000	Build and equip plant and buy machinery for manufacture of airplane engines.
Graham-Paige Motors Corp., Detroit, Mich.	\$1,803,280	Buy machinery for manufacture of aircraft engine parts.
Walter Kidde & Co. Inc., Bloomfield, N. J.	\$943,783	Build and equip plant and buy machinery for making oxygen cylinders, etc., used in aircraft.
Liberty Aircraft Products Corp., Farmingdale, N. Y.	\$1,088,000	Plant expansion, equipment and machinery to make aircraft accessories.
North American Aviation Inc., Inglewood, Cal.	\$2,300,000	Buy machinery for manufacture of airplanes.
North American Aviation Inc., Dallas, Tex.	\$7,700,000	Build and equip plant and buy machinery for manufacture of airplanes.
Ohio Crankshaft Inc., Cleveland, O.	\$3,968,130	Build and equip plant and buy machinery to enlarge capacity for production of aircraft engine crankshafts.
Otis Elevator Co., Harrison, N. J.	\$6,954,735	Build and equip plant and buy machinery for production of crank cases or aircraft engines.
Otis Elevator Co., Buffalo, N. Y.	\$79,890	Buy machinery for manufacture of aircraft engine parts.
Packard Motor Car Co., Detroit, Mich.	\$8,000,000	Plant expansion, machinery and equipment to make aircraft engines.
Reynolds Metals Co., Louisville, Ky.	\$2,504,611	Build and equip plant and buy machinery for manufacture of extruded products for use in aircraft production.
Sperry Gyroscope Co. Inc., Brooklyn, N. Y.	\$3,025,000	Buy machinery to make scientific equipment for navigation.
Studebaker Corp., Chicago, Ill.	\$50,000,000	Build and equip plant and buy machinery for manufacture and furnishing of aircraft engines and parts.
Vickers Inc., Detroit, Mich.	\$2,000,000	Build and equip plant at Detroit and buy machinery for production of aircraft accessories and anti-aircraft guns.
Vickers Inc., Waterbury, Conn.	\$610,000	Buy machinery for production of aircraft accessories and anti-aircraft guns.
Wright Aeronautical Corp., Hamilton County, O.	\$57,000,000	Build and equip plant for manufacture of aircraft engines.
Wright Aeronautical Corp., Hamilton County, O.	\$210,000	Buy site for plant for production of aircraft engines.
Wright Aeronautical Corp., Paterson, N. J.	\$1,500,000	Buy and rehabilitate plant for production of aircraft engines.



## Buick Proposes Huge Engine Unit

Plans for the immediate construction of the Buick Motor Division of General Motors Corp. of a \$31,000,000 aircraft engine plant in the village of Melrose Park, Chicago, were disclosed in Chicago late in January by Harlow H. Curtice, head of the Buick concern and a vice-president of GM.

The new plant which will be built under government contract for the production of Pratt & Whitney 1,200-hp. engines, will employ in the neighborhood of 10,000 persons with an estimated \$17,000,000 annual payroll, and will be one of the largest defense projects undertaken in the Chicago area, involving more than \$125,000,000.

Details of the project were released by J. E. Williams, former Buick controller and operating manager of the new plant. He said building plans call for a huge one-story manufacturing building of more than 1,000,000 sq. ft. of floor space in which parts and subassemblies will be produced and the engines assembled. In addition, there will be 24 test cells, a power house, personnel and administration buildings.

The Buick aviation engine plant will be one of the seven largest employers of labor in the Chicago area and probably the largest single employer in one plant.

Curtice also announced the formation of a separate manufacturing organization, headed by Williams as operating manager, and Joseph G. Hammond, formerly Buick general superintendent, as manufacturing manager, and composed of key Buick production and engineering technicians.

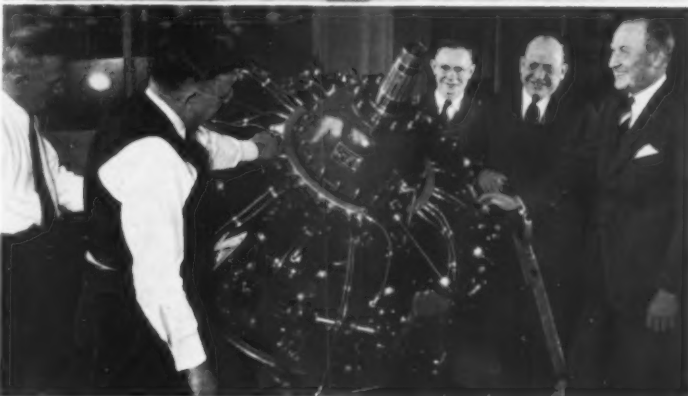
Buick's purchasing facilities will be available to the aircraft plant through the company's purchasing agent, L. A. Stewart, who will direct the defense manufacturing purchases with the assistance of W. B. Stickney, as resident purchasing agent.

Curtice said contracts already executed with the Army and those under negotiation involve a total of approximately \$34,000,000 for aircraft engines and parts.

The plant will be set up to produce 500 aircraft engines a month, or upwards of 5,000 a year under normal operation.

With the operation of the Buick plant at Chicago, GM will have approximately 40,000 employees engaged in aircraft and parts production of which 25% would be employed in Chicago.

## Buick Moves in on Chicago



The \$31,000,000 Buick aviation engine plant which will rise on a site in Melrose Park, Chicago, is illustrated in an architect's drawing above. The plant will build 500 Pratt & Whitney engines monthly and employ 10,000 in normal operation. Bids will soon be opened and construction started.

The 1,200-hp. engine Buick will build is shown in the center photo being inspected by company officials. Left to right: James McDade, production technician; C. N. Ofield, chief inspector of the aircraft plant; I. H. Larkin, assistant aircraft manufacturing manager; O. W. Young, Buick manufacturing manager; and Harlow H. Curtice, Buick president.

## Kollsman's Instrument Handbook is Reprinted

Originally issued two years ago, Kollsman Instrument Division's "Handbook of Airplane Instruments" has been reprinted in response to numerous requests. The 150-page, leather bound book contains directions and illustrations for 13 types of instruments and serves as an excellent guide for anyone interested in the maintenance and repair of airplane instruments.

With the growing training program, it is believed by Kollsman that there are many who will welcome a handbook of this kind. The company makes an attempt to get the name and address of each owner of the publication in order that he may be kept up to date with supplements on the procedure with new instruments. A new supplement is now in the process of being prepared, and will be sent to all handbook owners without charge.

A charge of \$2 is made for the "Handbook of Airplane Instruments." This covers shipping to any point. Requests for the book should be sent to Kollsman Instrument Division of Square D Co., 80-08 45th Ave., Elmhurst, N. Y.

## Airadio Inc. Formed

Announcement has been made of the formation of a new corporation to be known as Airadio Inc., successors to Airadio Co., now occupying an enlarged plant at 2 Selleck St., Stamford, Conn., equipped with new equipment for the manufacture of Custom Communications Equipment, according to M. B. Andrews, president.

## Studebaker Acquires 50 Acres at Chicago for Aero Engine Plant

Fifty acres of land have been acquired by Studebaker Corp. just north of Chicago's airport for the manufacture of parts under its \$33,657,580 government contract for Wright Aeronautical engines of the 2600 type, according to announcement by the Chicago Association of Commerce.

Employment for 4,000 will be provided, and over 60% of the work will be done by subcontractors outside the three Studebaker plants to be erected at Chicago, Ft. Wayne and South Bend, Ind. These three units will do the other 40%, including final assembly, according to Harold S. Vance, Studebaker chairman.

The Chicago plant, which will have 500,000 sq. ft. of floor space, is expected to produce two engines an hour on a double shift basis of operation. Aggregate floor space of the company's three plants will be 1,500,000 sq. ft. for airplane engine manufacture.

The War Dept. recently announced a contract for construction of the Studebaker plants under defense plant agreements. Details of the announcement revealed that the South Bend unit would be a main assembly plant; the Ft. Wayne expansion, a feeder plant for the manufacture of gears; the Chicago development, a feeder plant for the manufacture of connecting rods and precision parts.

Machinery under the contract will amount to \$10,045,313; plant construction, \$39,740,836.

## Aero Takes More Space

Aero Corp. has taken over an additional 32,000 sq. ft. of factory space at Hollydale, Cal., to augment the 18,000-sq. ft. plant at South Gate, according to C. A. Herberts, company president who was formerly president of Aircraft Precision Products. Company's backlog is in excess of \$200,000. Currently, three shifts are operating daily.

## Blind Work for Junkers

Acoustical gages which register readings by bell or buzzer signals are reported to have been developed by the Junkers aircraft works at Dessau, Germany. The new type gage makes possible the employment of blind persons for measuring tolerances of machine parts to an accuracy ranging from 1/100 to 1/1,000 of a millimeter.

According to the diameter of parts to be tested, piston or membrane type gages in which the mercury is raised in two capillary tubes are employed. The mercury columns close the electric circuit for the reprocessing and rejecting signals, respectively. The workmanship of the tested piece can also be judged by the blind worker through the pitch of the acoustical signal.

## Expansion Awards Total \$48,859,011

Government contracts for expansion of aircraft facilities totaled \$48,859,011 during the last fortnight with the largest award going to Buick Motor Division of General Motors Corp. for a plant (\$31,000,000), machinery and equipment (\$6,000,000), totaling \$37,675,150. The award provides for the manufacture of Pratt & Whitney engines at a plant to be erected at Melrose Park, Chicago. (See story above.)

Other projects approved included an award to Curtiss Propeller Division of Curtiss-Wright Corp. for additional machinery and equipment for the manufacture of propellers at Indianapolis, Ind. (\$7,099,850), and Caldwell, N. J. (\$1,769,800). (See AMERICAN AVIATION, Feb. 1). Approval for the Pittsburgh expansion of the company is still pending.

Third grant of the fortnight went to Reynolds Metals Co., Louisville, Ky., for additional plant facilities and equipment for the manufacture of aircraft and other military supplies. Contract totaled \$2,504,611.

## Consair Turns to U. of C.

To meet the need for trained aircraft inspectors, Consolidated Aircraft Corp., San Diego, Cal., turned recently to the University of California. J. H. Waterbury, company employment director, selected 23 college of engineering students who had from two and a half to three years' college experience. The students will work half a day at the factory, study for half a day (being paid by Consolidated) until they have completed their training.

## VIBRATION giving you trouble?

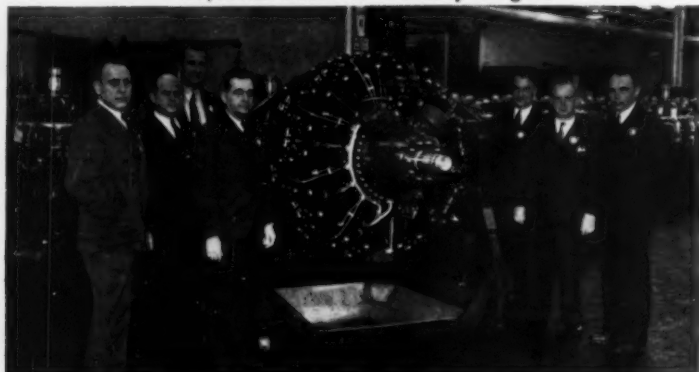
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## 25,000th Pratt &amp; Whitney Engine

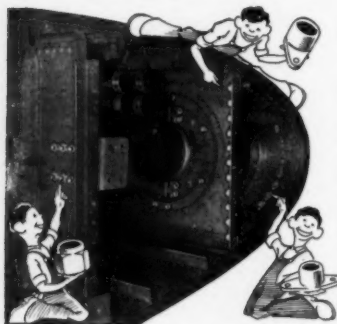


The 25,000th engine to be manufactured by Pratt & Whitney Aircraft Division of United Aircraft Corp. rolled off the assembly line at the East Hartford, Conn., plant late in January. Among those who were on hand for the occasion (left to right): Eugene E. Wilson, president, United Aircraft; A. V. D. Willgoos, chief engineer, Pratt & Whitney; W. A. Parkins, assistant chief engineer, P & W; William Levack, assistant superintendent of assembly, P & W; G. H. D. Miller, factory manager; Daniel Jack, assistant factory manager, and L. S. Hobbs, engineering manager, P & W.

## Toward 50,000 Planes

Titled "Toward 50,000 Planes," and posing the question, "Is Aviation Only a War Industry?" the annual aviation booklet (14 pp.) prepared by the aviation securities department of Hirsch, Lillenthal & Co., New York Stock Exchange firm, and now being distributed, reviews 1940 developments and discusses post-war possibilities of the industry. The booklet contains a comparative analysis of common stocks of aviation manufacturing companies.

Agawam Subcontracts to Grumman Organized by Albert P. Loening. Agawam Aircraft Products Inc., Sag Harbor, L. I., N. Y., has begun operations by serving as a subcontractor to Grumman Aircraft Engineering Corp. of Bethpage, L. I. The company will operate under Loening's management.

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## Labor Review

AFL Challenges CIO  
In West Coast Plants

Major threats of strikes in the aircraft industry were lacking during the past fortnight following settlement of the Ranger and Ryan controversies, but indications of an inter-union struggle for control of the Pacific Coast area grew.

AFL aircraft and machinists workers have launched an intensive mobilization of their forces to challenge the expanding CIO drive. E. L. Lynch, International Association of Machinists representative, has declared that an AFL aircraft organizing committee is being formed to lead a revitalized campaign with the backing of the Central Labor Councils in Los Angeles, San Pedro, Long Beach, Santa Monica and Glendale. "AFL machinists have established harmonious agreements with four Pacific Coast aircraft plants—Boeing, Hammond, Lockheed and Consolidated. We are now going out in an intensive campaign to other aircraft plants and shops," Lynch stated.

AFL and CIO drives appear certain to clash at Consolidated, where the former group is already well established and where Richard T. Frankenstein, CIO representative, has declared his union's immediate objective to be.

In Washington, it is reported that a recent survey among Treasury, War and Navy department officials has disclosed strong support for standardization of the aviation industry's labor policies. Sidney Hillman, Office of Production Management associate director general, has said that the uniform labor policy question is likely to get further study in the near future. He described the defense labor picture as "very satisfactory" and said he saw no reason for enactment of anti-strike legislation.

The National Labor Relations Board, meanwhile, has announced the certification of the CIO-UAW local as sole bargaining agency at Harvill Aircraft Die Casting Corp., Los Angeles, and has scheduled an election among production, inspection and maintenance employees of North American Aviation, Inc., Inglewood, Cal.

Other labor developments included a 2½-cent wage increase among all hourly employees at Northrop Aircraft Inc. and the settlement of a jurisdictional dispute which had tied up the Air Corps' \$1,550,000 expansion program at Wright Field.

## Hahn Spark Plug Changes Name

Firm name of Hahn Spark Plug Corp., Hatboro, Pa., has been changed to Air-Shields Inc., with all patents and processes being retained, according to John B. McPherson, vice president.

The company also announced the resignation of John R. Stewart, treasurer, who was called to active duty in the naval air force.

## GOVERNMENT CONTRACTS

## Awards of \$25,000 and Over

## Release Date Shown

## AIRCRAFT

Douglas Aircraft Co. Inc., Santa Monica, Cal., 1/27, airplanes, \$369,924 (Air Corps).  
Beech Aircraft Corp., Wichita, Kan., 2/1, airplanes and spare parts, \$1,191,000 (Air Corps).  
Grumman Aircraft Engineering Corp., Bethpage, N. Y., 2/3, airplanes, \$250,000 (Coast Guard).

## MISCELLANEOUS

Kellett Autogiro Corp., Philadelphia, Pa., 1/22, section assemblies, stand sleeves and rings, \$42,947 (Air Corps).  
Continental Motors Corp., Detroit, Mich., 1/23, aeronautical engines and parts, \$10,715,019 (Air Corps).  
Link Aviation Devices Inc., Binghamton, N. Y., 1/23, trainers, \$50,450 (Navy).  
Fairchild Aviation Corp., Jamaica, N. Y., 1/24, lens filter units, \$110,415 (Air Corps).  
Variety Aircraft Corp., Dayton, O., 1/24, stand assemblies, \$198,000 (Air Corps).  
Allith-Prouty Inc., Danville, Ill., 1/24, stand assemblies, \$88,750 (Air Corps).  
Chandler-Evans Corp., South Meriden, Conn., 1/24, pump assemblies, \$101,000 (Air Corps).  
Candler-Hill Corp., Detroit, Mich., 1/24, pump assemblies, \$45,000 (Air Corps).  
Sperry Gyroscope Co. Inc., Brooklyn, N. Y., 1/27, turret assemblies, \$5,151 (Air Corps).

Air Associates Inc., Bendix, N. J., 1/27, mooring kits, \$171,688 (Air Corps).  
Bendix Products Div., Bendix Aviation Corp., S. Bend, Ind., 1/27, parts, \$26,000 (Philadelphia Navy Yard).  
Kollsman Instrument Div., Square D Co., Elmhurst, N. Y., 1/27, tubes, \$20,000 (Philadelphia Navy Yard).  
General Electric Co., Schenectady, N. Y., 1/27, generator assemblies, \$21,000 (Air Corps).

Switlick Parachute & Equipment Co., Trenton, N. J., 1/27, flying suits, \$27,000 (Navy).

Kollsman Instrument Div., Square D Co., Elmhurst, N. Y., 1/27, pitot tube, \$63,000 (Navy).  
Eastman Kodak Co., Rochester, N. Y., 1/25, filter units, \$110,415 (Air Corps).  
Blackhawk Mfg. Co., Milwaukee, Wis., 1/25, jack assemblies, \$264,225 (Air Corps).

Bell & Howell Co., Chicago, Ill., 1/25, aircraft cameras, \$74,469 (Air Corps).  
American Gas Accumulator Co., Elizabeth, N. J., 1/25, lamp assemblies, \$25,000 (Air Corps).

Pioneer Instrument Div., Bendix Aviation Corp., Bendix, N. J., 1/31, compass assemblies, \$213,520 (Air Corps).

Pump Engineering Service Corp., Cleveland, O., 1/31, pumps, \$34,969 (Air Corps).

Jagger Watch Co. Inc., New York, N. Y., 1/31, tachometer assemblies, \$30,000 (Air Corps).

Folmer-Grafex Corp., Rochester, N. Y., 1/31, ground cameras, \$72,953 (Air Corps).

Fairchild Aviation Corp., Jamaica, N. Y., 2/1, cameras and miscellaneous equipment, \$317,490 (Air Corps).

Pump Engineering Service Corp., Cleveland, O., 2/1, fuel and vacuum pump, \$2,929,793 (Air Corps).

Eclipse Aviation Div., Bendix Aviation Corp., Bendix, N. J., 2/1, assemblies, \$578,925 (Air Corps).

General Electric Co., Schenectady, N. Y., 2/3, dynamometers, \$40,520 (Navy).  
Sperry Gyroscope Co. Inc., Brooklyn, N. Y., 2/3, bomb sights, \$5,180,100 (Air Corps).

Hamilton Standard Propellers Div., United Aircraft Corp., E. Hartford, Conn., 2/4, propeller blades and assemblies, \$73,267 (Navy).

Eclipse Aviation Div., Bendix Aviation Corp., Bendix, N. J., 2/4, aircraft starters, \$452,525 (Navy).

Ford Instrument Co. Inc., Long Island City, N. Y., 2/4, parts for torpedo director, \$81,804 (Navy).

Westinghouse Electric & Mfg. Co., Washington, D. C., 2/4, dynamometers and equipment, \$143,124 (Navy).

Goodyear Tire & Rubber Co., Akron, O., 2/5, wheel and brake assemblies, \$923,504 (Air Corps).

Lights Inc., Alhambra, Cal., 2/5, field lighting sets, \$613,605 (Air Corps).

Wright Aeronautical Corp., Paterson, N. J., 2/6, engine maintenance parts, \$241,537 (Air Corps).

Beiping Aircraft Co., Seattle, Wash., 2/6, armor plate protection, \$77,805 (Air Corps).

Hamilton Standard Propellers Div., United Aircraft Corp., E. Hartford, Conn., 2/6, propeller assemblies, \$77,064 (Air Corps).

Pollak Mfg. Co., Arlington, N. J., 2/6, assemblies, \$33,250 (Air Corps).

Lights Inc., Alhambra, Cal., 2/6, sets, \$85,507 (Air Corps).

Denison Engineering Co., Columbus, O., 2/6, stand assemblies, \$425,000 (Air Corps).

Weston Electrical Instrument Corp., Newark, N. J., 2/6, indicators, \$148,350 (Air Corps).

Sperry Gyroscope Co. Inc., Brooklyn, N. Y., 2/7, gyro compass equipment, \$88,800 (Navy).

Switlick Parachute & Equipment Co., Trenton, N. J., 2/10, parachute material, \$34,475 (Philadelphia Navy Yard).

Consolidated Aircraft Corp., San Diego, Cal., 2/10, airplane parts, \$46,126 (Philadelphia Navy Yard).

Grumman Aircraft Engineering Corp., Bethpage, N. Y., 2/10, airplane parts, \$27,931 and \$22,023 (Philadelphia Navy Yard).

Bendix Products Div., Bendix Aviation Corp., S. Bend, Ind., 2/10, carburetors, \$31,025 (Air Corps).

Eclipse Aviation Div., Bendix Aviation Corp., Bendix, N. J., 1/11, starter assemblies, \$30,360 (Air Corps).

Dayton Type Inc., Dayton, O., 1/11, vacuum chamber equipment, \$47,034 (Air Corps).

Globe Industries Inc., Dayton, O., 1/11, vacuum chamber equipment, \$45,105 (Air Corps).

Standard Oil Co., Louisville, Ky., 1/11, aircraft fuel, \$123,520 (Air Corps).  
Webster Electric Co., Racine, Wis., 1/11, solenoid assemblies, \$71,600 (Air Corps).  
Delco-Remy Div., General Motors Corp., Anderson, Ind., 1/11, solenoid assemblies, \$78,200 (Air Corps).

Goodyear Tire & Rubber Co. Inc., Akron, O., 1/15, gasoline hose, \$113,573 (Air Corps).

Variety Aircraft Corp., Dayton, O., 1/17, stand assemblies, \$57,600 (Air Corps).

Leece-Neville Co., Cleveland, O., 1/17, generator assemblies, \$39,700 (Air Corps).

Tide Water Associated Oil Co., San Francisco, Cal., 1/17, aircraft fuel, \$31,000 (Air Corps).

Kollsman Instrument Div., Square D Co., Elmhurst, N. Y., 1/17, compass assemblies, \$95,000 (Air Corps).

Air Cruisers Inc., Clifton, N. J., 1/17, cylinders, \$406,330 (Air Corps).

Bendix Parts Div., Bendix Aviation Corp., South Bend, Ind., 1/17, maintenance parts, \$168,266 (Air Corps).

Weston Electrical Instrument Corp., Newark, N. J., 1/17, thermometer indicators, \$144,500 (Air Corps).

Fairchild Aviation Corp., Jamaica, N. Y., 1/17, cameras, \$387,475 (Air Corps).

Aro Equipment Corp., Bryan, O., 1/17, segregators, \$48,850 (Air Corps).

West India Oil Co., San Juan, P. R., 1/17, aircraft fuel, \$176,000 (Air Corps).

Adams & Westlake Co., Elkhart, Ind., 1/17, cockpit lamp assemblies, \$31,434 (Air Corps).

Buick Motor Div., General Motors Corp., Detroit, Mich., 1/20, engines & spare parts, \$36,497,520 (Air Corps).



## Incorporations

California—Aeronautics Instructors  
Club, Los Angeles; organizers headed  
by Claude M. Maytorena, Los Angeles.  
California—Aviation Supply Co., Los  
Angeles; \$25,000; headed by George W.  
Nauda Marshall, Los Angeles, and  
Conrad C. De Pietro and Beatrice De  
Pietro, Glendale.  
California—Clarke Aero-Hydraulics  
Co., 117 N. Hill St., Pasadena; to  
manufacture aircraft parts; 50,000  
shares n.p.v.; granted permit to issue  
new shares. John V. Clarke, pres.;  
and S. Conzelmann Jr., v.p.; J. A.  
Clarke, secy.-treas.; additional directors  
S. H. Clinedinst and John K. Lyon.  
California—C. W. C. Corp.; aircraft  
parts and machinery; granted permit  
to issue 4265 shares of \$5 par value  
capital stock; authorized capital 5,000  
shares. Directors: F. A. Wilder, H. E.  
Wilder, W. E. Cnelew.  
California—Doak Aircraft Co., Los  
Angeles; \$1,000,000. Directors: E. R.  
Doak, Windsor Crow, Los Angeles;  
C. Deeds, Redondo Beach; Dr. Leo  
Madsen, Santa Monica; Reid Parkin,  
Greewood.  
California—H & F Inc., Santa Clara  
County; to promote aeronautics. Among  
directors is Earl W. Heple, San Jose.  
California—Hockaday-Newby Aircraft  
Co., Los Angeles. Incorporators: Noel  
Hockaday, Burbank; Howard L. Newby,  
Santa Pasadena; H. Gregory Brilliant,  
Los Angeles.  
California—Johansen Aircraft Corp.;  
to manufacture airplanes; granted per-  
mit to issue 40,000 shares of an author-  
ized 500,000 \$1 par shares. Directors:  
Walter E. Johansen, Walter E. Johan-  
sen Jr., Edwin J. Miller, Lund P.  
Stenderup, Peter L. Stenderup.  
California—Pierce Flying Service,  
San Diego County; \$50,000. Directors:  
Peter L. Pierce and George A. Cor-  
bett, Bureka; Hugh Fullerton, San  
Diego.  
Canada—Boundary Bay Flying Train-  
ing School Ltd.; \$50,000; Vancouver.  
Canada—Edmonton Flying Training  
School Ltd.; \$50,000; Edmonton, Alta.  
Canada—Nova Scotia Elementary Flying  
Training School Ltd.; \$50,000; Hal-  
ifax, N. S.  
Connecticut—Flight Training Re-  
search Association Inc., Greenwich;  
aid, cash, \$6,000; property, \$18,000;  
50 shares n.p.v. Albert Chester Travis  
Bardsdale, N. Y., pres.; Alan M.  
Macracken, Greenwich, v.p.; Robert  
Fulton Jr., Greenwich, secy.-treas.  
Delaware—Ajax Aircraft Corp.; air-  
craft; \$600,000, par \$1. Incorporators:  
and H. Jackman, Edwin E. Lindgren,  
San Cosgrove, New York.  
Delaware—Electrol Aircraft Corp., air-  
craft; \$100,000, par \$100. Incorporators:  
William McInnes, New Rochelle, N. Y.;  
Howard T. Walden Jr., Larchmont,  
N. Y.; Antonio Silla, New York.  
Delaware—Waterman Airline Inc.;  
aircraft; \$1,000,000, par \$100. Incorpor-  
ators: R. F. Lewis, L. H. Herman,  
Walter Lenz, Wilmington.  
Nebraska—Aviation Industries Inc.,  
Omaha; \$25,000; 250 shares at \$250 par;  
operate aviation schools, to manu-  
facture airplanes and equipment, to  
conduct experimental work in aviation  
and maintain laboratories. Incorpora-  
tors: Glenn R. Morton, Louis Shetler,  
and H. Heftl.  
Nebraska—Cub Flyers Inc., Omaha;  
a profit organization to conduct a  
flight school. Incorporators: L. G.  
Alden, B. Wurtsbaugh, Russell  
Oliver, Franklin R. DeVry, Virgil  
Brown, all of Omaha.  
New Jersey—Lakeland Flying Service  
Inc., Wharton; \$25,000. Agent: Richard  
Smith.  
New York—Agawam Aircraft Products  
Co., Sag Harbor Village; aircraft; \$1,000.  
Martin, Rathbone & Perry, 70 Broadway,  
New York City.  
New York—Lockport Aeronautical  
Co., Lockport; instruction in avia-  
tion; \$25,000. Stockwell, Campbell,  
Horn & Hooper, Lockport.  
New York—Rinret Manufacturing  
Co., New York City; to construct air-  
craft; \$20,000. Robert Lande, 363 7th  
St., New York City.  
North Carolina—Hiatt's Inc., Win-  
ston-Salem; to operate a general auto-  
mobile and airplane sales and service  
business; authorized capital stock,  
\$50,000; subscribed stock, \$20,100. In-  
corporators: M. S. Hiatt, Huron S.  
Hiatt, Dorothy S. Dance, all of Win-  
ston-Salem.  
Texas—American Aircraft Engine  
Co., Delaware; manufacturing; capi-  
tal stock \$25,000 and 10,000 shares n.p.v.  
(\$1,000 paid in). Home office and  
plant: J. P. Markham Jr., Houston.  
Texas—Austin J. C. Flying Club,  
Austin; airplanes; capital stock, \$1,000.  
Incorporators: Jesse Allman, Tom Beas-  
ley, E. H. Smart.  
Texas—Cleburne Flying Club Inc.,  
Cleburne; educational; no capital stock.  
Incorporators: John Solon King, Truett  
B. Bailey, James Barnett.

## NEW YORK STOCK EXCHANGE

Week Ended Jan. 25					Week Ended Feb. 1					Week Ended Feb. 8				
High	Low	Net Change	Sales		High	Low	Net Change	Sales		High	Low	Net Change	Sales	
American Airlines .....	52	48	-3	2,700	50	44 1/4	-3 1/2	5,000		47	43	-4	4,200	
Aviation Corp. ....	47 1/2	45 1/2	-2	8,700	43 1/2	41 1/2	-2	20,100		42 1/2	40 1/2	-2	14,300	
Bendix Aviation .....	36 1/2	35 1/2	-1	19,300	37 1/2	34 1/2	-3	20,900		36 1/2	34 1/2	-2	16,700	
Boeing Airplane .....	18 1/2	16 1/2	-2	16,300	18 1/2	16	-2 1/2	22,600		17 1/2	16	-1 1/2	8,100	
Consolidated Aircraft ..	29 1/2	27 1/2	-2	7,200	29 1/2	26	-3 1/2	5,800		28 1/2	25 1/2	-3	3,500	
Continental Motors .....	9 1/2	8 1/2	-1	25,300	9 1/2	8 1/2	-1	28,000		8 1/2	8	-1/2	21,500	
Curtiss-Wright .....	28 1/2	28	-1/2	2,300	28 1/2	26 1/2	-2	3,700		27 1/2	26 1/2	-1	3,600	
Douglas Aircraft .....	75	74	-1	2,500	75 1/2	68 1/2	-7	4,100		71 1/2	67 1/2	-4	4,600	
Eastern Air Lines .....	30 1/2	28 1/2	-2	4,800	29	27	-2	3,400		27 1/2	25 1/2	-2	3,200	
Ex-Cell-O .....	29 1/2	29 1/2	-1/2	900	30	27 1/2	-2 1/2	1,300		28 1/2	27 1/2	-1	1,400	
Grumman Air. Eng. ..	16 1/2	15 1/2	-1	1,300	16 1/2	15 1/2	-1	1,600		15 1/2	15 1/2	-1	1,000	
Lockheed Aircraft .....	28 1/2	25 1/2	-3	9,000	28 1/2	23 1/2	-5	9,100		24 1/2	23 1/2	-1	8,800	
Glenn L. Martin .....	29 1/2	28 1/2	-1	5,400	29	27 1/2	-1 1/2	5,500		27 1/2	25 1/2	-2	7,500	
Natl. Aviation Corp. ..	10 1/2	9 1/2	-1	8,700	9 1/2	9 1/2	-1/2	8,900		9 1/2	8 1/2	-1/2	2,000	
N. American Aviation ..	16 1/2	15 1/2	-1	10,700	16 1/2	15	-1 1/2	8,100		15 1/2	14 1/2	-1	7,800	
Pan American Airways ..	14 1/2	13 1/2	-1	10,700	14 1/2	13	-1 1/2	8,100		14	12 1/2	-1 1/2	2,800	
Sperry Corp. ....	36 1/2	36	-1/2	3,600	36 1/2	33 1/2	-3	8,000		34	32 1/2	-1 1/2	11,900	
Square D Co. ....	35	34 1/2	-1/2	1,100	35 1/2	31 1/2	-4	1,900		34 1/2	32 1/2	-2	1,200	
Thompson Products .....	32 1/2	32 1/2	-1/2	400	32 1/2	30 1/2	-2	1,200		30	28 1/2	-1 1/2	900	
TWA .....	15 1/2	15 1/2	-1/2	1,400	15 1/2	14 1/2	-1	2,400		14 1/2	14 1/2	-1/2	1,100	
United Aircraft .....	41 1/2	40 1/2	-1	8,000	41	37 1/2	-3 1/2	12,000		38 1/2	36 1/2	-2	7,000	
United Air Lines .....	15 1/2	14 1/2	-1	7,900	14 1/2	13 1/2	-1	7,600		13 1/2	12 1/2	-1	7,400	
Wright Aeronautical ..	98	96	-2	70	95	92 1/2	-2 1/2	40		.....	.....	.....	.....	

## NEW YORK CURB EXCHANGE

Week Ended Jan. 25					Week Ended Feb. 1					Week Ended Feb. 8				
High	Low	Net Change	Sales		High	Low	Net Change	Sales		High	Low	Net Change	Sales	
Aero Supply A .....	6 1/2	6 1/2	.....	700	21 1/2	21 1/2	-3/4	100		21 1/2	21 1/2	-1/4	100	
Aero Supply B .....	6 1/2	6 1/2	.....	700	5 1/2	5 1/2	-1/4	1,300		5 1/2	5 1/2	-1/4	1,400	
Air Associates .....	1 1/2	1 1/2	+ 1/4	100	1 1/2	1 1/2	+ 1/4	200		1 1/2	1 1/2	-1/4	500	
Air Investors .....	1 1/2	1 1/2	+ 1/4	100	1 1/2	1 1/2	-1/4	200		1 1/2	1 1/2	-1/4	300	
Air Investors war .....	4 1/2	3 1/2	+ 1/2	10,100	4	3 1/2	-1/2	13,400		4	3 1/2	-1/2	9,800	
Aviation & Transp. ....	7 1/2	6 1/2	+ 1	13,100	7 1/2	6 1/2	-1	3,700		7 1/2	6 1/2	-1	2,200	
Beech Aircraft .....	23 1/2	22	+ 1	3,100	23 1/2	20 1/2	-3	3,200		21 1/2	20	-1 1/2	1,400	
Bell Aircraft .....	5 1/2	4 1/2	-1	4,700	4 1/2	4 1/2	-1/4	700		4 1/2	3 1/2	-1	300	
Bellanca Aircraft .....	6 1/2	6 1/2	.....	500	6 1/2	5 1/2	-1	3,400		6 1/2	5 1/2	-1	1,700	
Breeze Corps .....	10 1/2	10 1/2	-1/4	3,500	10 1/2	9 1/2	-1	3,300		10	9 1/2	-1/2	2,600	
Brewster Aero .....	4 1/2	4 1/2	.....	200	4 1/2	4	-1/2	1,400		4 1/2	4 1/2	-1/4	400	
Canadian Colonial .....	3 1/2	3 1/2	-1/4	800	3 1/2	3 1/2	-1/4	3,100		3 1/2	3 1/2	-1/4	600	
Fairchild Eng. & Air. ....	13 1/2	13 1/2	-1/4	200	13 1/2	12 1/2	-1	300		12 1/2	12 1/2	-1/4	700	
Irving Air Chute .....	12 1/2	12 1/2	-1/4	1,300	12 1/2	11 1/2	-1	2,200		12 1/2	11 1/2	-1	1,100	
Penn-Central Airlines ..	4 1/2	4 1/2	-1/4	2,100	4 1/2	4	-1/2	5,500		4 1/2	4	-1/2	4,700	
Republic Aviation .....	2 1/2	2 1/2	-1/4	100	2 1/2	2 1/2	-1/4	100		.....	.....	.....	.....	
Roosevelt Field .....	4 1/2	4 1/2	-1/4	200	4	3 1/2	-1/2	400		.....	.....	.....	.....	
Ryan Aeronautical .....	7 1/2	7 1/2	-1/4	900	7 1/2	6 1/2	-1	1,800		7 1/2	6 1/2	-1	1,200	
Vultee Aircraft .....	4 1/2	4 1/2	-1/4	100	4 1/2	4	-1/2	100		.....	.....	.....	.....	
Waco Aircraft .....	4 1/2	4 1/2	-1/4	900	4 1/2	4	-1/2	1,300		4 1/2	4 1/2	-1/4	1,200	
Western Air Express ..	4 1/2	4 1/2	-1/4	900	4 1/2	4	-1/2	1,300		4 1/2	4 1/2	-1/4	1,200	

Texas—Frye Aircraft Co. of Texas, Dallas; manufacturing; capital stock, \$10,000. Incorporators: Donald Frye, W. O. Cooper, Russell V. Rogers Jr.

Texas—(Amendment) Southern Aircraft Corp., Dallas; changing place of business from Houston to Dallas and increasing capital stock from 62,500 shares n.p.v. to 100,000 shares n.p.v.

Vermont—Universal Air Freight Corp., Delaware firm with headquarters in New York City; to carry freight by air in intra-state and interstate commerce. R. N. Mellus, president; Webster E. Miller, Montpelier, Vermont agent.

## Literature Available

Atlantic Gear Works, 204 Lafayette St., New York, N. Y., has issued a new 1941 catalog which includes a special supplement listing the types of equipment the company has available for special work. Large plants seeking subcontractors will be interested in this feature.

California Flyers School of Aeronautics, Los Angeles Municipal Airport, Inglewood, Cal., is circulating a sixty-four-page catalog and vocational guide describing the organization's schools of airline piloting, aeronautical engineering and aviation mechanics.

Fafnir Bearing Co., New Britain, Conn., has prepared a twenty-page catalog containing late information on its line of ball bearings designed for use by the aircraft industry.

Globe Products Manufacturing Co., 3380 Robertson Blvd., Los Angeles, Cal., is issuing literature on a new milling attachment in which the head mounts on the lathe bed, the table on the lathe carriage.

B. F. Goodrich Co., Akron, O., has new catalog sheets on its line of gasoline hose for tank truck and tank car service and its patented Vulcalock valve.

Holley Carburetor Co., Aviation Division, Detroit, Mich., has a twelve-page, highly illustrated brochure on Holley Aviation Carburetors.

Monarch Alloys Co., Ravenna, O., has prepared sales literature on its new bearing and seal bronze, Monarch Metal.

Monocoupe Aeroplane & Engine Sales Corp., 444 Madison Ave., New York, N. Y., is distributing sales literature on the 1941 Monocoupe.

National Purchasing Co., 405 Boulevard Bldg., Detroit, Mich., is distributing literature on Turchan Follower

Machines, developed for the work of precision duplicating of dies, moulds, patterns, rolls, form cutters, etc. Pacific Airframe Division of Airplane Manufacturing and Supply Corp., Union Air Terminal, Burbank, Cal., has issued its 148-page catalog "M" of airplane parts, supplies, materials, accessories and maintenance.

Pangborn Corp., Hagerstown, Md., has presented its twenty-eight-page Bulletin No. 213, "Pangborn Rotoblast Rocker Barrels," which describes the operation of cleaning miscellaneous items of gray iron, steel, semi-steel malleables, forgings, plate, brass, bronze, alloy and other castings, heat treated and metal parts.

Plomb Tool Co., 2209 Santa Fe Ave., Los Angeles, Cal., has presented a new edition of its catalog and reference book (No. 18 A) on forged hand tools.

## Argood, Bongeaus Named

Frank Argood has been appointed secretary-treasurer of Air Standard Inc., west coast manufacturer of training planes, and Ben Bongeaus has been elected a director of the company.

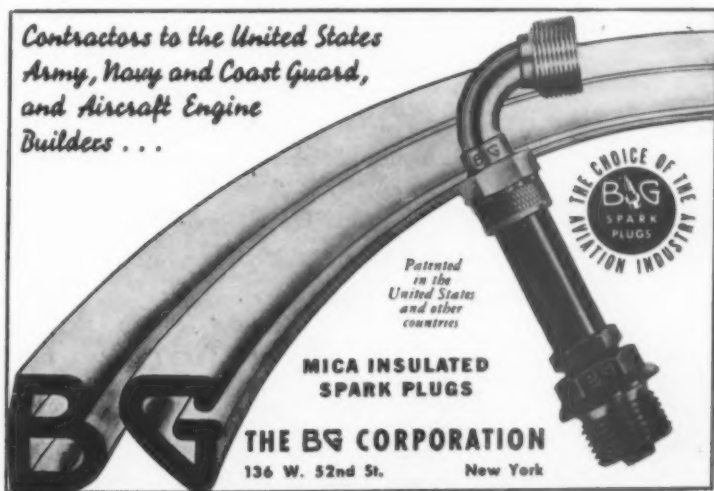
## Brew With Aro

George Brew, formerly with Stinson and Locomotive companies, is now aeronautical sales manager for Aro Equipment Corp., Bryan, O. The Washington representative for Aro is Tom Hildebrandt.

## Thompson Products Plans Loan

Stockholders of Thompson Products Inc., Cleveland, O., have been asked to approve an arrangement by which the company could make a \$4,500,000 loan bearing interest at 2 3/8% and to be retired serially over a 10-year period. Bankers Trust Co. of New York and First National Bank of Chicago would participate to extent of \$1,500,000 each, while National City Bank of Cleveland is included at \$750,000, Cleveland Trust Co. at \$500,000, and Union Bank of Commerce, Cleveland, \$250,000. Proceeds would be used to refund short-term bank loans which on Oct. 10 amounted to \$3,700,000 and bore interest at 1 1/2%.

Contractors to the United States Army, Navy and Coast Guard, and Aircraft Engine Builders . . .



MICA INSULATED  
SPARK PLUGS

THE B.G. CORPORATION

136 W. 52nd St.

New York

## Washington Financial Review

### SEC Registrations

#### Continental Air Lines Inc.

Company estimates net proceeds from 100,000 common shares, \$1.25-par, covered in recent registration statement at \$397,575, after certain costs to be used for three Lockheed Lodestars at \$279,030, two spare twin-wasp engines \$24,500; two spare hydromatic propellers \$5,265, spare parts \$10,000, shop equipment \$40,000, radio equipment \$10,000, fixtures \$5,000, and working capital. H. M. Byllesby & Co. Inc., Chicago, Ill., by agreement of Dec. 7 will take 100,000 shares at \$4.12½, selling shares at initial public price of \$5.

Increased capitalization: On Dec. 20, 1940, stockholders approved increasing authorized capital stock from 50,000 shares, \$10-par, to 400,000 shares, \$1.25-par, exchange for the outstanding stock to be on basis of 8½ shares for one. At Sept. 30, 23,636 shares were outstanding, with 1,000 reserved for employees-officers.

Continental operates three Lockheed Lodestars and two Lockheed 14H craft. United Air Lines now overhauls Continental's propellers, engines and instruments at Cheyenne, Wyo., but upon completion of \$300,000 Denver municipal hangar, which will be occupied jointly with United, under 25-year lease, Continental will have own complete maintenance and overhaul base.

Remuneration in year ended June 30, 1940: Robert F. Six, president, director, \$12,000; Robert H. Purcell, vice president, director, \$4,800; O. R. Haueter, vice president, director, \$7,650; Avery Black, who resigned as director Sept. 12, \$8,023.

Holdings: The estate of William H. Erhart, father-in-law of Robert Six, at Dec. 1, 1940, held 7,300 of \$10-par shares or 30.88% of the class. Will is in probate, and unless disposed of this stock will be held in trust for certain beneficiaries under terms of the will. Prior to his death, Erhart allowed Six to vote his shares "on virtually all occasions." Voting power of said shares now rests with the executors until distribution, at which time the shares, if not disposed of, will be voted by trustees.

Six is neither an executor nor a trustee, and since Erhart's death, Six has not voted these shares. After sale of the registered shares, the estate will own approximately 20.6% of the class. Louis H. Mueller, chairman of the board, at Dec. 1 was beneficial and record holder of 4,400 shares or 18½% (after sale of registered shares, 12.4%); Sheldon G. Cooper, director, 175 shares; Haueter, 55 shares; Terrell C. Drinkwater, director, 40 shares. Six held no stock.

#### Everel Propeller Corp.

Firm located in Baltimore, Md., in statement filed Jan. 30 registered 50,000 capital shares, \$1-par, designating Riter & Co., New York City, principal underwriter, initial price as yet undetermined. Registrant will deliver to underwriter at time these registered shares are taken up and paid for, assignable warrants to purchase all or any part of 12,500 shares. Of the proceeds, \$5,000 will repay loan from Baltimore Commercial Bank, \$8,629 will repay loans from officers and directors, with the remainder earmarked for working capital.

Registrant is engaged in experimental and development work relating principally to automatic variable-pitch propellers. Following organization in 1937, company at first worked on single-bladed automatic variable-

pitch propellers for low horsepower engines, but because of limited demand for this type of prop, registrant in 1938 began development of multiple-blade products, embodying principles similar to those of predecessor type. The corporation has now developed two-bladed automatic variable-pitch propellers for use on engines of 45 to 300 hp.

Now lacking manufacturing facilities, firm plans (1) to have others produce on contract; or (2) acquire or build its own plant; or (3) grant manufacturing licenses.

Holdings at Jan. 15, 1941: A. J. Pink, chairman of the board, 7,576 shares; Enos S. Stockbridge, president, director, chief executive officer, 3,647 shares; Walter W. Everts, vice-president, director, 11,710 shares; Sidney H. Fedah, vice-president, director, 300 shares; Henry Stockbridge 3d, secretary, treasurer, director, 770 shares; Herbert C. Craft, director, 500 shares; Alfred Dohme, director, 4,100 shares; Paul F. Hackethal, chief engineer, director, 200 shares; John Leutkemeyer, director, 25 shares; Addison E. Mullikin, director, 3,083 shares; Samuel L. Willard, director, 700 shares.

Balance sheet at Dec. 31: Assets \$261,438, current \$3,404, equipment and airplanes \$5,548, patent and patent applications \$60,538, deferred account \$191,300. Current liabilities \$33,556. Capital, \$1-par common capital stock; by resolution of board in February 1941, authorization increased from 100,000 to 200,000 shares; issued 88,290; paid-in surplus \$139,482.

#### Aviation Corp.

Statement filed covers 1,445,555 capital shares, \$3-par, stock to be offered through transferable warrants to holders of its outstanding capital stock of record Feb. 24, 1941, on basis of one additional share for each three held. Warrants will expire Mar. 10. Aviation & Transportation Corp., parent, will be entitled to purchase 429,595 additional shares of the stock.

Of cash received from sale of stock, \$1,250,000 will be used by company to discharge its present bank loans of like amount. Any additional cash received and not used to pay for assets of Aviation & Transportation Corp. will be used in connection with company's business activities and those of its operating subsidiaries, Aviation Manufacturing Corp. and Vultee Aircraft Inc. Price at which stock will be offered to stockholders and public is to be furnished by amendment.

According to SEC announcement, "The parent company will enter into an agreement with the subsidiary whereby it will transfer its assets (other than stock of Aviation Corp. and not less than \$200,000 in cash) of a value sufficient to pay for the 429,595 shares of additional capital stock and such of the first 528,319 shares offered to other stockholders and not taken by them."

"In any event . . . parent will transfer to the subsidiary 100,356 shares of common stock and 8,468 shares of preferred stock of Auburn Central Manufacturing Co., 87,800 shares of founder's stock of New York Shipbuilding Corp. and other miscellaneous assets." Shares not subject to the agreement and not taken by other stockholders will be offered publicly, with Emanuel & Co. and Lehman Brothers, New York City, as principal underwriters.

### Current SEC Report

#### Airplane Manufacturing & Supply Corp.

Company reports that recent offering of 93,266 shares (see AMERICAN AVIATION, Sept. 1, 1940, p. 26) has been

### Brewster Comptroller



Carl S. Goodwin

Has been appointed comptroller of Brewster Aeronautical Corp., Long Island City, N. Y., George F. Chapline, president of the company, announced on Feb. 7. Goodwin will act as chief accounting officer of Brewster, whose unfilled orders approximate \$107,000,000. For the last several years Goodwin has been on the staff of S. D. Leidesdorf & Co., certified public accountants, New York City, where he had direct contact with aircraft manufacturing as well as other industrial concerns.

sold, proceeds totaling \$93,266 before deduction of \$5,000 fee paid to G. Brashears & Co., Los Angeles, and incidental expenses of \$659. Total of 44,590 shares were subscribed for by stockholders at \$1, and 32,284 were sold to public at \$1.25. Brashears & Co. has purchased from registrant at \$1 a share for its own account 16,392, which were withdrawn from offering hereunder. Brashears owned 50,541 shares and Ralph D. Lacoe 42,333 at Jan. 30 when \$73,066 common capital shares, \$1-par, were outstanding.

Net profit to surplus for period Mar. 1-Aug. 31, 1940, was \$26,644 (gross sales, less returns, etc., \$355,453; cost of sales \$254,068; gross profit \$101,387; commissions received \$19,316).

Balance sheet at Aug. 31: Assets \$492,568, current \$342,456, fixed assets \$33,107, deferred charges \$16,364, intangibles \$100,637. Current liabilities \$114,447. Capital, outstanding \$279,800; paid-in surplus \$29,663; capital surplus \$1,748; earned surplus \$26,644.

### Financial Reports

**VULTEE AIRCRAFT INC.**—Net profit for fiscal year ended Nov. 30, 1940, is estimated at \$374,000, equal after charges and federal income taxes to 48½ a share, according to announcement by Richard W. Millar, president. Common capital stock was increased from 750,000 shares to 1,052,168 by issuance of 302,168 shares on Oct. 21 in connection with purchase of Stinson Aircraft Division and Barkley-Grow Aircraft Division from Aviation Manufacturing Corp. Net sales for 1940 fiscal year approximated \$6,800,000, including \$1,200,000 from sale of manufacturing rights. No comparable data for preceding fiscal periods are available, inasmuch as this is the first complete fiscal year of Vultee as a corporate entity.

**BENDIX AVIATION CORP.**—Consolidated earnings statement of company and domestic subsidiaries for three months ended Dec. 31, 1940, the first quarter of new fiscal year shows \$2,835,320 profit or \$1.35 each on 2,105,013 shares outstanding, after provision for normal federal income taxes in amount of \$1,746,006 and excess profits taxes of \$2,054,714. For 12 months ended Dec. 31, 1940, net profit before provision for depreciation, interest and federal taxes totaled \$18,472,294, net profit after charges totaled \$9,319,070 or \$4.42 a share. Total provision for federal income and excess profits taxes during calendar year 1940 amounted to \$8,006,507, increase of almost 82½% over calendar 1939. Sales for calendar 1940 were 70% higher than for 1939, with

### Engineers

G. T. Reid, director of education for Douglas Aircraft Co., points out that the vast majority of engineers do not design and build ships, but rather, work out details and oversee actual construction. Reid said only two per cent of all engineers employed by Douglas are primarily concerned with design and development of new planes.

final quarter of 1940 up about 100%.

Backlog at Jan. 22 exceeded \$200,000. Discussing provision for excess profits taxes, E. R. Palmer, vice president and treasurer, said: "We are still unable to make an exact determination of liability for excess profits under Second Revenue Act of 1940, due the lack of Treasury Dept. regulations and rulings more clearly defining 'vested capital' under this Act. However, the amount currently set aside should provide for the maximum such liability."

**AVIATION CAPITAL INC.**—Certificate states that liquidating value of its capital stock was \$19.18 a share at Dec. 31, comparing with \$20.01 on Jan. 31, 1939, which was adjusted to reflect the split-up effected by 100% dividend paid June 18, 1940. Marketable securities carried in balance sheet Dec. 31, 1940, at cost of \$348,612, market value of \$400,800.

**AVIATION & TRANSPORTATION CORP.**—Certified report for fiscal year ended Nov. 30, 1940, shows net loss of \$529,369, after expenses, taxes, etc., extraordinary charges of \$391,400, including \$261,790 loss on sale of liquidation of investments in affiliates, compares with net loss of \$371,400 in preceding year, after extraordinary charges of \$233,947, including \$220,000 write down of marketable securities.

**CESSNA AIRCRAFT CO.**—Year to date, 1940, net loss of \$32,609, compared with \$10,634 loss for 10 months to Jan. 30, 1939; net sales \$431,438 and \$111,000 for respective periods.

**AERCO CORP.**—This Hollywood, Calif., firm announces net earnings from organization Aug. 5, 1940, through Dec. 31, of \$3,983, of which \$3,240 was earned in December. Backlog at Dec. 5 was \$237,230, employment 96 persons, three shifts a day.

**LIBERTY AIRCRAFT PRODUCTS CORP.**—Unaudited 1940 report shows net income after taxes \$247,440 up to \$1.24 each on 200,000 common shares outstanding, compared with \$37,540 in 1939 or 30¢ each on 128,532 shares then outstanding.

### Dividends

**KINNER MOTORS INC.**—5¢ a common share, payable Feb. 15 of next month.

**BORG-WARNER CORP.**—40¢ a common share, payable April 1 of next month.

### Applications for Listing

**HAYES MANUFACTURING CORP.**—325,189 common shares, \$2-par, to be registered New York Stock Exchange upon notice of issuance.

**AIRCRAFT ACCESSORIES CORP.**—105,715 common shares, 50¢-par, to be registered Los Angeles and San Francisco Stock Exchanges upon notice of issuance.

### Aviation Corp. Proposes

#### Acquisition of Parent Firm

A proposal for dissolution of Aviation & Transportation Corp. by distribution to stockholders of a liquidating dividend consisting of its holdings of Aviation Corp. and cash remaining after the transaction, will be voted on at annual meeting of A & T stockholders Feb. 14. Aviation Corp. stockholders will vote on the proposal at a special meeting on Feb. 17 when they will also be asked to consider an increase in authorized \$3-par capital stock from 5,000,000 shares to 7,500,000.

This is preliminary to Aviation Corp. plan to offer 1,445,555 additional shares to stockholders on basis of one share of new stock for each three shares held at not less than \$3.50 nor more than \$5.50 a share. (See Aviation Corp. SEC Registrations, this page.)

## Northwest Airlines, Inc.

### COMMON STOCK

Bought - Sold - Quoted

## THE MILWAUKEE COMPANY

135 West Wells Street  
MILWAUKEE, WISCONSIN



# BENDIX REVOLUTIONIZES THE HYDRAULIC FOUR-WAY VALVE!



ANOTHER DEVELOPMENT BY  
**BENDIX**  
OF BURBANK

Advanced features of design and operation have been incorporated by Bendix into a Four-Way Valve weighing but 10 ounces and which measures only 2 1/2 inches in diameter



**EXTREME** compactness with light weight and reliability are combined in the new Hydraulic Four-Way Valve developed by Bendix of Burbank.

The unit incorporates poppet valve elements which radiate from a single central cam shaft. This construction provides the least cubic volume and weight per square inch of port area, and results in the shortest possible fluid path. Either back or side outlets are available and the valve requires a minimum of space for panel mounting.

The specially designed valve elements insure smooth, quiet operation, even in excess of normal ratings, and the absolute reliability and freedom from appreciable wear of this exclusive construction has been demonstrated in life tests of over 100,000 cycles.

The new Bendix Four-Way Valves may be equipped with integral inlet check and thermal relief valves. They are available in three sizes, covering all tube requirements from 1/4 inch to 3/4 inch. Write or wire for the Bendix Hydraulic Catalog.

## BENDIX AVIATION, LTD.

BURBANK, CALIFORNIA

CUSHION-CLAMPS • PRESSURE REGULATORS • PRESSURE WARNING SWITCHES • PRESSURE ACCUMULATORS  
ACTUATING CYLINDERS • RELIEF VALVES • HYDRAULIC HAND PUMPS • CUSTOM BUILT RADIO EQUIPMENT

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# "Get 'em into the Blue"

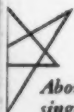
...off the production line...into the sky

MATERIALS...parts...supplies stream into Vultee plants from every point of the compass. Out the factory doors flows a steady stream of completed airplanes...ready to fly for defense.

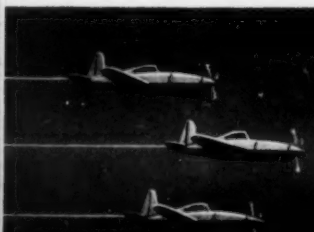
Back of every operation, permeating the entire Vultee organization, there's a primary production objective best expressed in the simple phrase: "Get 'em into the Blue"...into the Blue for the U. S. Army Air Corps and the foreign democracies.

Early in 1941, Vultee becomes one of the first aircraft manufacturers to complete its current expansion program, representing an increase in plant area of 1300%. Decentralization of manufacturing facilities into 3 complete divisions together with other innovations will enable Vultee to multiply deliveries 10 times during this year.

*Stinson Aircraft, a division of Vultee is now in production on a new commercial plane for 1941. Write Stinson for complete information.*



Above illustration—Largest single delivery of airplanes to U. S. Army Air Corps. 31 Vultee BT-13 planes in mass formation over Vultee Field, California.



## VULTEE AIRCRAFT, INC.

VULTEE FIELD, CALIFORNIA • NASHVILLE, TENNESSEE

### STINSON AIRCRAFT

WAYNE, MICHIGAN